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RED CROSS WORK.

[Amelia Josephine Burr of The Vigilantes.]

Interminable folds of gauze

For those whom we shall never see.
Remember, when your fingers pause,
That every drop of blood to stain
This whiteness falls for you and me,
Part of the price that keeps us free
To serve our own, that keeps us clean
From shame that other women know—
Oh saviors we have never seen,
Forgive us that we are so slow!
God—if that blood should cry in vain
And we have let our moments go!

—Unknown Exchange.

WHAT ABOUT NITRATE PLANTS, MR. BAKER?

THE country has a right to demand more information in regard to the nitrate plant or plants than Secretary Baker of the War Department has yet given out. His announcement that \$4,000,000 will be expended for "certain plants," leaving \$16,000,000 "undesignated," and that these certain plants are said to be experimental and do not involve the use of water-power, is entirely too ambiguous.

The people of this country have a right to know what is going on, and to demand a full statement as to the reasons for the adoption of this modified program, and of the radical changes from the intention of Congress when the bill was passed for the building of a nitrate plant.

We are having too much secrecy in some Government affairs at present.

DON'T BLAME WALL STREET.

IF a more unpardonable and unprincipled statement has been made by any American paper than that by the New York World to the effect that Wall Street is trying to beat down the price of Liberty Bonds in order to insure a higher rate of interest on other loans, we have not seen it. When Wall Street led the nation in its effort to arouse the country to the necessity of subscribing for these Liberty Bonds it displayed patriotism to a degree surpassing that of nearly all other sections of the country.

A charge that Wall Street is trying to beat down the price of these bonds is on the par of those who try to stab the country in some vital spot. German influences may be at work against Liberty Bonds, but not the real Wall Street.

The World ought to be ashamed of its effort.

The North and West Dependent Upon the South for Food.

THE total shipment of potatoes for one day, Thursday, July 12, from all parts of the United States, according to official reports, amounted to 838 carloads, of which 783 carloads were sent out by the South, almost wholly to the North and West, against a total shipment in the entire North and West of 57 carloads of locally-produced potatoes, and of this beggarly amount of 57 carloads, 20 were produced in California and 3 in Washington.

Starting with the early potatoes of Florida several months ago, shipped to the extent of some thousands of carloads, on up through the potato-growing region of the Carolinas, the Charleston section alone having produced \$4,000,000 of potatoes sent North and West, and then on through the potato-growing regions of the far South to Texas, this section has contributed tremendously to the food supply of the nation. Without this production of potatoes the North and West would have faced a potato and fruit famine during the last two months which would have startled the country.

On July 12—and these are the official figures of the United States Department of Agriculture—Virginia alone shipped 686 carloads of potatoes, mainly to the North and West. The total shipments of Virginia potatoes this year to other sections will amount to about 4,000,000 barrels, worth to the growers about \$20,000,000, and yet a few months ago we were told by the Assistant Secretary of Agriculture that the South would be permitted to starve unless it raised its entire food supply, because cars would not be furnished for the shipment of food supplies into the South!

With a view to a complete study of the shipment of early vegetables and fruits from the South to other sections, we have secured from the leading railroad systems of the South statements showing the number of carloads of fruits and vegetables shipped during twelve months from this section to Northern and Western markets, each road reporting the amount of stuff that had originated on its own line only.

The total amount of freight of foodstuffs of this kind furnished by the South to the North and West is probably over 3,000,000 tons, the actual figures received from the transportation lines which reported being 140,000 carloads, to which should be added over 10,000 carloads annually handled by express from the central South alone and the shipments for non-reporting roads partly estimated. The aggregate is easily 200,000 carloads, with a tonnage, as stated, of over 3,000,000 tons of food, estimated on the low basis of 15 tons to a carload on the average.

The magnitude of the shipment by express alone is indicated in a statement from the Southern Express Co. of Atlanta, which shows that during the five months from January to May of this year that

company handled from Florida 1,533,041 boxes and crates of citrus and other fruits and vegetables.

During the shipping season ending with April this spring the express company handled from Marshallville, Ga., 15,629 crates of asparagus for eastern and western points, and from South Carolina, North Carolina and Virginia sections that company has so far this season handled 383,839 crates of vegetables and fruits, and the season is hardly well under way.

All of this has been done within five months by the Southern Express Co. from the limited area of the Central South, including Florida.

Of the total of 200,000 carloads of fruits and vegetables, one road alone hauled stuff originating on its line to the extent of 34,500 carloads.

The value of this produce has run from \$150 up to \$2000 a car, and if we put an average of \$700 per car, we would have a total of over \$140,000,000 worth of early fruits and vegetables furnished by the South to the North and West.

This fact is not generally taken into consideration when the South is officially criticized for not raising its own foodstuffs. Whenever the exact figures can be obtained, as they should be secured at the next Census, we believe the total for vegetables and fruits alone will run very far above the \$140,000,000 which we estimate, and be nearer to \$200,000,000.

The value of this traffic to the railroads is more fully appreciated by the railroad people than the general public. Hauling out of the South 200,000 carloads of fruits and vegetables, the roads secure on this traffic the highest rate of freight because of its perishable character. Several years ago the MANUFACTURERS RECORD was informed by one of the leading railroad officials of the South that his road had received as much as \$1500 freight from one acre of celery, which would include the icing and the handling of the entire shipment, and that \$800 to \$900 freight from an acre of celery would be a fair average.

Considering the amount of freight that is received from the twenty-five to thirty bushels of wheat per acre raised on the best wheat land in the country with this enormous freight on the perishable products of truckers we can get some idea as to what this traffic means to the railroads of the South and to their connecting lines in the North and West.

Every year sees a rapid increase in this market garden work of the South in supplying the North and West with foodstuffs. Upon this section the North and West are wholly dependent through the winter and early spring for fresh foodstuffs, and were it not for the South's activity in producing vegetables there would be a famine in the eastern and western markets for cabbage, potatoes, onions,

berries, beans, peas and many other things which are supplied to them by the South in such abundance.

One can scarcely pick up a Southern paper from any of the truck or food-growing regions of that section without being struck with the amount of freight traffic in these food products.

The Charleston district of South Carolina reports having sent North this year over \$4,000,000 worth of white potatoes, while the Hastings district of Florida, which has become one of the most noted potato-growing regions of the country, sent out about an equal amount this year, or perhaps more, and Virginia send out \$20,000,000 worth. All the way down to Texas and Arkansas these centers of food-producing activities have been steadily developing during the last ten to fifteen years, and the nation is annually becoming more and more dependent upon the South for foodstuffs.

To these shipments of fruits and vegetables there should be added many millions of dollars of canned fruits and vegetables and other millions for the oysters and fish shipped from the South to the North and West.

In 1914 the value of the South's canned fruits and vegetables amounted to over \$22,000,000, of which Maryland's share was \$17,500,000. A large proportion of this great output in Maryland and some of that in other Southern States went North and West.

The shipment of canned oysters from the South amounted in the Census year 1914 to \$1,305,000. To this should be added canned crab meat and shrimp. Millions of dollars' worth of raw oysters are shipped West and North, and also fish, especially to the West, from all leading points along the South Atlantic Coast from the Chesapeake Bay to Texas. Full trainloads of oysters go out from Baltimore daily during the rush season, and from many Southern ports from Norfolk to New Orleans vast quantities of oysters and fish are daily shipped.

There are also shipped out of the South, especially from Tennessee, Kentucky and Texas, some millions of dollars' worth of turkeys and chickens. There are points in the South where the handling of this business has become an industry of great extent, furnishing food to people throughout the country.

Indeed, when we begin to figure on the various foodstuffs which the South provides for the rest of the country we are amazed at the magnitude of the industry, and necessarily are inclined to wonder what the West and the North would do for fruits and vegetables, for oysters and fish and other food products if it were not for the abundant supplies sent out by the South. Counting the value of vegetables, fruits, fish and oysters shipped by the South to the North and West, it is entirely safe to estimate the total at largely over \$200,000,000.

WHERE MADE.

"BILLY" SUNDAY is credited with having made the statement in one of his New York sermons:

If you could turn Hell upside down, you would find stamped on the bottom "Made in Germany."

If Mr. Sunday is excusable for telling so plain a truth, there is the other side which may be stated to the effect that if you could turn Germany upside down, you would find on the bottom "Made in Hell."

Indeed, you hardly need look to the bottom to find this, for it stands out stamped strongly on whatever side of Germany you may look.

SENATOR JOHN SHARP WILLIAMS' TRUE VISION OF OUR STRUGGLE.

SENATOR JOHN SHARP WILLIAMS of Mississippi is one of the men in public life in Washington who can see through the present situation and who dares to have the courage to express his convictions in regard to our long delay in getting into the war, to the danger which that delay has brought upon us and to the tremendous danger which we face in the possibility of defeat if we do not move with all the power which the nation can command. Last winter the writer wired an editorial from Florida that the defeat of this country in the Revolutionary War or its defeat in the Civil War would have been inconsequential in comparison with its defeat by Germany. A defeat in the Revolutionary War would have put this country in the class of Canada as a subsidiary or dependency of Great Britain, but it would not have meant the overrunning of the nation by barbarism, and even as Canada has developed and created a magnificent civilization, allied to Great Britain as it is, so might we have done despite our rightful struggle for absolute freedom. We also said that the defeat of this country in the Civil War would have been a misfortune but not comparable with our defeat by Germany, because while it would have been a great misfortune to have two countries, the North and the South, side by side with their forts and armaments and constant hostile opposition, civilization would not have been destroyed and barbarism would not have overrun the land. Senator Williams made exactly the same points in a speech in the Senate last Saturday, when justly criticizing one of Senator Stone's Anti-American speeches, he said:

In so far as a part of what the Senator from Missouri has just said is a clarion call to duty to stiffen our sinews and summon up our courage to see this thing through to a successful issue, I agree with him most emphatically, but there is a part of what he said which is an iridescent dream, and I cannot permit it to pass without entering my protest.

There never was a month or a week or an hour or a minute when this country could have suggested terms for a just and lasting peace which would not have been scorned at the Court of Berlin by the Kaiser and his military and bureaucratic entourage. That sort of a thing is a mere dream of what might have been, a picture of what cannot be not even now, much less then.

We not only could not have laid down terms for a just and lasting peace which would have been accepted, but we could not even lay down any terms to prevent the sinking of our own ships upon the high seas. We could not lay down anything that would not be kicked out of court at Berlin. Why? Because that crowd had a perfect contempt for the American Government and for the American people, the contempt that the skilled and prepared boxer has for a heavy, beefy fellow who cannot assert himself. That was their view of us.

That is their view of us yet, and that will remain their view of us until upon the plains of France or upon the high seas we indicate that there is something else to us. It was the contempt that a prepared athlete has in a cause, even unjust, for an antagonist whose muscles are flabby, whose preparation has been nothing, and whose antagonism can, in the opinion of the athlete, be ignored.

I say that because, otherwise, a part of what the Senator from Missouri just said might be a reflection upon the President and the Administration not intended, but in effect. The President and the Administration did do everything that human intellect could conceive for the purpose, if possible, of bringing an end to the war. We did everything that we had a right to do. The President came to this chamber and made that speech which was criticized not only abroad but here in this chamber as being a "peace at any price" speech, the celebrated speech in which he said we must have peace without victory.

He traveled the whole gamut up and down. He allowed this nation to suffer humiliation after humiliation, shame piled upon shame, grazed the very edge of cowardice because his heart beat in unison with the cause of a just and lasting peace.

Now we are in it the Senator is right in the balance of what he says. We have got to see it through and as the darkies down South say, see it plumb through. We have got to see it through not only to a successful issue of this war but while we are about it, to a just and permanent treaty which shall as far as possible make war cease to be a game of athletes.

We have got to see it through to a point where the world can hope that there shall be peace for some generations at any rate, to a point where the civilized world shall say to any nation which goes to war without having previously submitted the cause in controversy or proposed to submit it to fair and impartial arbitration, "You are an outlaw nation, you are no longer within the pale of international law, you are outside the pale, you are everybody's enemy, we shall treat you as such until you come back to your senses."

We are tired of this. We don't propose in time of peace

to prepare for war always. We propose now in times of peace to prepare for peace, and for a just and lasting peace, and we are going through with it with men and money and ships, on land and on sea, and in the air above them both and under the sea, until we have seen it through, not only to peace, but to a just and lasting peace, a righteous peace. Old Thomas Jefferson said at one time that no man was responsible for the rightfulness of his conduct, but every man was responsible for the righteousness of it. So it is with nations.

Now, I agree with the Senator from Missouri. It seems to me that we have been indulgent in endless verbalities, endless criticism, and less attention to minute and to small matters. The House committee has just reported to the House a bill to spend some \$600,000,000 for aeroplanes and see what we can do in this war in the quickest possible way. I hope and I have reason to hope, from what I have heard, that the House will pass it through without waiting to consider every "if," "but" and "and" in every provision of the bill. If it is not perfectly right it can be made right, but the main thing is to make a start.

When somebody is rushing at me with both fists extended I have not got time to criticize the attitude of my own fists or person. The thing is to meet it, and to meet it as well as I can and as quickly as I can, and as forcibly as I can.

The country is not unaware of what we have been doing, and the country is also not unaware of what we have not been doing, when we might have been doing something. This is the Armageddon, the war of all the nations of all the world and everybody at everybody's throat, and we have spent three months in merely initiating the Legislation that is to start off the carrying on of this war. We have spent three months in passing the Legislation necessary to mobilize men, money and resources, so that we might prove in the beginning after the legislation a factor in this struggle. Men may cry peace, as the old revolutionary hero said: "Peace, peace," but there is no peace.

For six months before we went into this struggle there was no peace, and every man with a long vision in him knew it. The only mistake that we have made is that we did not get into it in time. Liberty and democracy all over the world may be deprived of a place under the sun as the ultimate result of this struggle because we did not have a vision long enough and did not get into it in time.

Gentlemen tell me that certain things are unconstitutional because they would be unconstitutional in peace time. Other extremists say that we have certain war powers. Neither is true. The Constitution stands unchanged, but in its applicability to change it applies to them according to the condition in which the things are at the time of the application.

There are hundreds of things that are thoroughly constitutional in time of war in carrying out the behest of the Constitution to support an army and navy and to carry on war, which would be not only absurd, but really unconstitutional in times of peace, for the simple reason that in times of war the exercise of the power is proper and necessary in order to accomplish a constitutional end, which is to support armies and navies and carry on the war.

Summon up your courage. Stiffen your sinews. Realize that this war is the most gigantic struggle that this country was ever engaged in, not even excepting the revolution, because if we had failed in that we would still have been colonies of that country which, whatever the objections to it might have been or may be, was and is the freest country in the world. We would have been in no worse condition today than Canada is.

This struggle is even more serious than was the Civil War, because even had the South been victorious there would have been two free countries upon this hemisphere with miserable custom-houses between us and the keeping up of armies out of suspicion for one another; but still there would have been two free countries.

You lose this fight and the road is made clear from Berlin to Bagdad; from Belgrade upon the Danube down to Salonica and across to Asia and across to Asia Minor and under the government of the Hohenzollerns and the Hapsburgs and Junkerdom.

One of two things is going to happen. You can either bid eternal farewell to democracy on this earth or else you can make out of America as Europe has made out of herself an armed camp, sitting and watching all the time a panther in his lair, ready to spring whenever you are off guard.

What is the use of fooling with any of these "ifs" and "buts" and "notwithstanding" and "moreovers" and "whereases"? Get the substance of what you want in the grand outline and put it through. Meet the enemy as the enemy meets us with every man and every resource and every form of national virility and fidelity.

War is war, and the man who attempts to carry on war upon the same principles that would guide him in peace times in ordinary legislation is either lacking in acuteness of vision or he is lacking in loyalty to the country in behalf of which he wants the war to be carried on. Hew to the line, let the chips fly as they may.

See this thing through first; see it through, but not to peace only, which might be merely an armistice and a continuation on this eternal curse of national armed camps all over the world, of which Great Britain and we, the two branches of the English-speaking race, must after this war become a party. Hitherto we have avoided it—not to a mere peace which may be a sound and a word and a name, but a just and lasting peace, bottomed upon the rights of nationalities, bottomed upon the rights of those who speak the same language, not to be repressed and oppressed by others, and bottomed, above all, upon justice and righteousness and the obligation of international compact.

HOW TO BRING ABOUT ENLARGED PRODUCTION TO MEET WORLD'S NECESSITIES.

IN its broadest aspect the war is being fought not so much for the benefit of the people living today as for those of the coming centuries. This generation will have to bear the fearful burden of sending millions of its men to the battle line; it will have to bear the burden of the disorganization of business, the burden of sorrow and suffering of many kinds and of the exorbitant cost of foodstuffs and of all other things due to war conditions. It ought not, therefore, to have to bear an undue proportion of the burden of the financial cost of the war.

Its other burdens are great enough without carrying that.

The larger part of the cost of war should be thrown upon future generations, for through all the centuries to come the world will be reaping the benefits of the terrific struggle of those living today.

In framing the revenue bills these facts should be borne in mind with a determination to call upon the people of today for just as small an amount of taxation as is possible, giving fair consideration to the present situation from all standpoints and to the limitless value to generations yet unborn of the work that the people of today are doing.

To saddle the present with a cost in men, in sorrow and in disorganized business operations with a heavy financial burden instead of throwing the financial burden on the future, when the people will be better able to bear it, and when the progress and possibilities of the country freed from war will make the payment of this indebtedness a simple matter, would be a great mistake.

The effort of Congress should be to lessen to the utmost extent taxation on the business interests of today instead of trying to find a way to tax business almost unto destruction.

It will be impossible to tempt capital to invest in new enterprises or the enlargement of existing plants unless there is an unusually attractive opportunity for profit. And yet the great question before the country today is how to bring about the increase in the output of coal, of iron and steel, of cotton and foodstuffs and fertilizers and everything else which enters into the business activities of the nation.

It is impossible to build an armor plant at present, because steel cannot be had.

It is impossible to build enough ships, so sadly needed, to meet the demand of the hour, because steel is not available.

It is impossible to make railroad extensions and improvements, because steel could not be had even if the money needed could be secured by the railroads.

We should, therefore, as a nation bend every energy to bringing about the largest freedom of investment in productive work. We should stimulate by every possible means the energy and the activity of business men, whether they be farmers or bankers or iron and steel producers or engaged in other lines of work.

We must increase our farm products far beyond what we now have in sight. This year's crops spell famine unless we can vastly increase them next year. We cannot do this without the farmers being stimulated by high prices to increase their acreage and to pay a sufficiently high rate of wages to attract men into agricultural work.

We must stimulate iron and steel production and encourage the earning of large profits, for unless big profits are in sight men will not take the risk of building plants, not knowing whether the future will justify their construction or not.

It will not be possible to finance for the enlargement of coal mining, the opening up of other mineral properties, the hunting of oil at every possible place or to stimulate the building of furnaces and steel plants unless there is a chance of a big profit for those who take the risk of losing much in attempting things of this kind.

Congress should put a premium upon these activities by eliminating excess taxation from profits put back into the enlargement of operations. Every

dollar that a manufacturing concern producing the things needed for war is willing to take out of profits and put into the building of new plants or the enlargement of existing plants to meet the world's pressing needs should be freed from excess taxation.

Co-operation on the part of the Government to stimulate business men to enlarge their output by expenditures out of present profits should be encouraged, and the Government should look with favor upon any movement which can be encouraged to turn present profits into increasing productive capacity.

To tax on the basis of excess profits money thus expended, or which would be thus expended if freed from taxation, would be an unwise policy.

The Government can discourage production, lessen the output of farms and factories and bring about gradual stagnation by unwise methods and undue taxation, or it can stimulate to the utmost extent increased output through a system such as here suggested.

Will the Government kill the goose that lays the golden egg, or will it fatten the goose that it may continue to produce golden eggs?

WHO WERE THE AMERICANS WHO ACCEPTED GERMAN BRIBES?

CARL W. ACKERMAN, who represented the United Press in Germany prior to the breaking of diplomatic relations, went there as a pro-German, but after experience in that country became very pronouncedly anti-German. In a book recently issued he makes a long list of charges against Germany, and among them are the following:

Germany encouraged and financed German-Americans in their campaigns in the United States.

Germany paid American writers for anti-American contributions to German newspapers and for pro-German articles in the American press.

Germany prohibited American news associations from printing unbiased American news in Germany.

Germany prevented American correspondents from sending true dispatches from Berlin during every submarine crisis.

Mr. Ackerman also says:

"Germany had been supporting financially some Americans, as the State Department has proof of checks which have been given to American citizens for propaganda and spy work.

"I know personally of one instance where General Director Heinicken of the North German-Lloyd gave an American in Berlin \$1000 for his reports on American conditions."

Early in the war between Germany and the Allies a number of organizations were formed in this country, apparently (to those who were not able to look behind the scenes and understand the motives of these people) in the interest of peace in general, while they were in reality in the interest of peace only upon Germany's terms and Germany's terms at that time were for the utter overrunning of Europe. Indeed, Germany's terms, as these very people knew, were just exactly the same as those of the murderer who enters your house at night and, having killed the women of the family, proposes peace on the basis of the status quo. In other words, having murdered all whom he could reach, he is willing to make peace when he finds that the man of the house, or the policeman, has at last succeeded in pointing a gun at his head. That is the kind of peace Germany wanted, and that is the kind of peace these organizations had in mind for Germany.

Baltimore became notorious for being the headquarters of one of these organizations, composed of women, in which the dominant spirits were either Germans by birth or by descent, and intensely German in their activities. Other cities became likewise notorious as being the headquarters of many similar organizations.

We wonder if the Government has filed away any information as to how much German money, directly or indirectly, was contributed toward the payment

of these wicked campaigns, designed for the express purpose of deceiving the people of this country in the interest of Germany.

As Mr. Ackerman says that the State Department has proof of checks given to American citizens for propaganda and spy work, we wonder if the time has not come for the publication of a list of these checks and all other information which the Government has on the spy work of Germans and German-Americans in this country.

Referring to the Americans who came out of Germany with Ambassador Gerard when this country recognized the state of war that was existing by Germany's fight upon us, Mr. Ackerman says:

The train which left Berlin on the night of February 19 carried the happiest group of Americans which had been in Europe since the war began. Practically no one slept. When the Swiss border was reached the Stars and Stripes were hung from the car windows and Americans breathed again in a free land. They felt like prisoners escaping from a penitentiary. Most of them had been under surveillance or suspicion for months. Nearly everyone had personal experiences which proved to them that the German people were like the Government—there was no respect for public sentiment or moral obligation. Some of the women had upon previous occasions, when they crossed the German frontier, submitted to the most inhuman indignities, but they remained in Germany because their husbands were connected in some way with the United States Government or semi-public service work.

Elsewhere Mr. Ackerman writes:

As Germany became more and more suspicious of Americans in Germany who were not openly pro-German, she made them suffer when they crossed the German frontier to go to neutral countries. The German military authorities at border towns, such as Warneunende and Benthelm, took a dislike to American women who were going to Holland or Denmark, and especially to the wives of United States consular officials. One time when I was going from Berlin to Copenhagen I learned from the husband of one of the women examined at the border what the authorities had done to her. I saw her before and after the ordeal, and when I heard of what an atrocious examination they had made I understood why she was in bed ten days afterward and under the constant care of physicians. Knowing what German military officers and German women detectives had done in some of the invaded countries, one does not need to know the details of these insults.

Mr. Ackerman's book is entitled "Germany the Next Republic?" It tells the inside story of the things that went on in Germany just before the war and during the two years he was there as the representative of the United Press; and the brief extracts which we have taken from it are only indicative of the whole story from beginning to end. If it were necessary to lift the veil which has hid from the eyes of some Americans the fearful blot which has forever stained the life of Germany, Mr. Ackerman has done it. His position gave him the opportunity of seeing the inside life of the whole condition there, and of the acts of the German people and the German Government. While much that he says is probably new to some of our readers, there is but little in it which should not have been adequately appreciated by the American people during the last two years, for those who cared to make a study of the real conditions could have learned most that Mr. Ackerman has so graphically brought together in his book.

UPON THE PACIFISTS.

REMINING Henry Ford of his bitter fight against the enlargement of the Navy and his denunciation of the people who advocated a Navy in order to get "bloody profits," charging them with being the murderers of Americans who might die in the war, Sea Power now asks Mr. Ford who are the real murderers of the men who shall die because of our failure to be prepared. Sea Power also asks if Mr. Ford has been heard of as giving the vast profits of his business to the country, or if he has even shown the manhood to apologize for his mistake and to apologize to the men he so baselessly maligned.

Why should Sea Power expect such things of any of the tribe of pacifists, upon whose heads will rest the blood of many a man who might have been saved to his family and to the world had William J. Bryan and all of the pacifist crowd never been born.

BE NOT DECEIVED BY GERMANY'S PEACE TALK.

DO not be deceived. Germany will put forth many rumors in regard to peace, hoping thereby to create throughout the world an impression that she wants peace, and thus throw upon this country and the Allies the burden of blame if we do not accept Germany's peace moves. That is the game, and that has been the game of Germany for many months.

Moreover, Germany will fill the world with stories about its inability to continue the war, or, at least, such rumors will percolate through the world from German sources for the express purpose of causing this country to halt in its war preparations. Do not believe anything Germany says until she has unconditionally surrendered.

The great game of seeking to deceive us and our Allies will be played to the utmost extent of the power of German diplomacy. We will be asked to walk into the parlor of the spider. If we accept the invitation, we will, like the guileless fly, be promptly absorbed by the spider.

When Germany really reaches the limit of its fighting ability—and it has not by any manner of means reached that yet—there will be a tremendous effort to bring about peace on the basis of saving Kaiser Wilhelm and his co-workers in the world's greatest campaign of murder. When Germany reaches this point it will struggle for peace, or Kaiser Wilhelm and his followers will, hoping thereby to be permitted to deal with the United States and the Allies around a peace table where no suggestion would be brought up for consideration of the utter destruction of Hohenzollernism and the condemnation to death or to some other even more severe punishment to be meted out to the leaders in this world-murdering campaign.

Efforts will be made to bring about peace proposals before Germany has been compelled to surrender unconditionally. But if we do not take into account the necessity of compelling an unconditional surrender and then fix the peace terms based on the awful war upon civilization, upon the millions who have died because of Germany's war and the hundreds of millions who have suffered in anguish because of the inhumanity of Germany, we shall be recreant to our responsibilities for the centuries to come.

The individual, the community or the country which, for the sake of ease and comfort and peace, surrenders to lawbreakers and murderers the right to set the terms on which they are willing to stop their murdering without any punishment for the past would justly be doomed to eternal ruin, and that would be our just fate if we should be misled by Germany's efforts to secure peace without punishment for its misdeeds, and without indemnity for the awful cost in money which has been brought upon the world.

There should be no peace except based on the full punishment—the penalty of death or a convict's life in stripes on the highways—of those who have been guilty of bringing on the war and of furthering its atrocities, and until Germany has been compelled to assume a burden of indemnity commensurate with the limit of its ability for generations to come to pay, until Belgium has been completely restored to the extent that money can be made to do it, until Alsace and Lorraine have been returned to France and France paid for the awful cost in men and money which it has had to bear because of Germany's atrocious war, and until other countries have been restored and other nations have had their burdens of debt amply protected by Germany's indemnity.

No maudlin sentiment should be permitted to control us for peace on any other terms. So far as this country is concerned, President Wilson stated that we neither sought indemnities nor any other material advantage, but we have a right, from the highest ethical point of view, to demand that Germany shall bear a fair share of the cost of the expenses which we are incurring in this war, and that for every life lost since the Lusitania was sunk Germany shall, to the utmost extent that money will recompense, indemnify the families of those

who have been murdered by her in this campaign, down to the last American who dies in war.

Until Germany realizes that the iron band that civilization is tightening around her means the complete crushing of Kaiserism and the death of those, from the Emperor down, who have been responsible for this war, and until it realizes that through the generations to come Germany must pay the cost to the world, its people will not quite realize the tremendous guilt which rests upon them, for they are trying to measure things on some other basis than on the only basis which the world should consider.

HOW A COAL CONSUMER VIEWS THE COAL SITUATION.

G. C. BUQUO of the G. C. Buquo Lime Co., Hot Springs, N. C., writes:

I have read your paper for a long time now and I find myself agreeing with almost every position you have taken for many months, but there is one subject on which you are in error, and that is the coal subject. I would like exceedingly to show you our files upon this subject and you would readily see that the coal operators were anything else but patriotic. The price of coal was jumped from \$1.10 at the mines to \$2.75, and through combination we were forced to accept a contract with the clause inserted whereby the mine has the right to increase this exorbitant figure if mining is increased in cost. There was no recourse whatever, and, as there was a combination of the operators, we could do nothing but sign, and have received notice that we will be billed for the additional cost for June, although the price paid was equal to about 200 per cent. profit. I can hand you a letter wherein there is absolute proof that there is no justice in the claim of the operators that coal is scarce, and you will easily see that we were held up, as all other consumers are being. Coal can be mined under average conditions for not exceeding \$1 per ton throughout the South, and this is easily borne out by the contract we had for several years, and but for war and the scramble for war profits we would be paying today. This price made a good round profit for the mines, as attested by their stock values.

That agreement of the coal operators was one of the smoothest things ever put over on any country, and Secretary Baker is absolutely in the right in his contention. The scarcity of cars, used by the mines as an argument for higher prices, was a lie of the whole cloth, too, and we satisfied ourselves fully as to that by sending a man to the coal fields.

The MANUFACTURERS RECORD can appreciate the feelings of Mr. Buquo in regard to the cost of coal, but some of the positions taken by him are, we know, entirely incorrect.

In the first place, the suggestion that the reported scarcity of cars "was a lie of the whole cloth" is so absolutely contrary to the facts known to every man in the country who has cared to investigate the railroad situation that it is difficult to understand how any man employed by him to make such an investigation could have given such an erroneous statement. The railroad people are at their wits' end trying to handle coal and other traffic. Every intelligent man in the country knows that the greatest business problem before the country is how to increase transportation sufficient to meet the necessities of the times. Every man knows, or should know, that the railroads are cutting out hundreds of passenger trains in order that passenger engines may be turned to hauling freight.

Men who bought pig-iron months ago are still unable to have it delivered because of the lack of cars, and we published two weeks ago a statement from a big Western house that it was paying storage and interest charges on Birmingham iron bought last February which had not been moved because of the inability to get cars and locomotives, and this statement is a fair indication of the railroad situation of the country. Mr. Buquo, therefore, is badly informed on that point.

The demand for coal is far in excess of the possibilities for output. That is known to all business people who are in touch with the situation. It is also known that from the panic of 1907 until the stimulation brought about by the European war the iron and steel and coal interests had been passing through the longest, severest depression in their history, and prices which prevailed during that period should be no criterion whatever for prices prevailing now. Birmingham, for instance, was selling pig-iron for \$9.50 a ton two years ago and

losing money on every ton it sold at that price. Present prices may be too high and unjustly inflated, but the price which prevailed two years ago was simply destroying the whole iron industry of that section, as of the rest of the country.

Coal-mining operations were during that long period almost, if not quite, as much depressed as iron, and the prices prevailing should not for a moment be considered as a basis for prices which should prevail now. With increasing cost of labor, with lessened willingness of miners to work regularly, with increasing cost of everything which goes into mining operations, there is of necessity a steady advance in the actual cost of coal, and no concern in the country could sell coal today at the prices prevailing two years ago without being headed straight for bankruptcy, and that on a toboggan-slide basis. Therefore, the suggestion of Mr. Buquo's, that the cost of mining coal can be measured by the contract price which he had for several years, is wholly untenable.

The MANUFACTURERS RECORD is not at all unmindful of all of the disadvantages under which business men must labor in these days of rapidly-changing costs and currents of trade. It has no desire to pose as the advocate of high prices except on the basis of such prices as would yield a profit sufficient to tempt into these industries every dollar of capital that can be had in order to increase the output. It fully appreciates how any concern might, like Mr. Buquo's, be misled by some of these charges; and not in the interest of the producers of coal or iron or steel but in the interest of the consumers as well as of the country at large it presents some of these facts for consideration.

WASTEFUL LOADING OF FREIGHT CARS SHOULD BE STOPPED.

THE following letter concerning the conservation of the supply of railroad cars is a pithy summarization of conditions as to the wasteful methods of loading cars by many shippers. At a time like this the methods here described really smack of disloyalty. Those guilty of such acts should be made to understand that the difficulties with respect to the prompt transportation of goods of all kinds is largely dependent upon them and their employees or agents, and that such methods are contrary to the interests of the public:

Atlanta, Ga., June 23.

Editor Manufacturers Record:

I have always taken a keen interest in the MANUFACTURERS RECORD. I read this publication for its editorials and for the general information about the South that it contains. Its editorials are particularly strong and are as enlightening as those of any publication I know.

The railroad page of the MANUFACTURERS RECORD is always interesting and instructive, and I am writing this note principally for the purpose of encouraging your efforts to save space in freight cars. To a man outside of the transportation business these articles may fall on deaf ears, but manifestly this should not be the case.

It has always been my opinion that shippers and receivers should combine for mutual helpfulness in conserving the car supply. For example, I have, within the past month, analyzed the movement of cotton from one of our larger shipping points to Carolina mill points. The total movement approximated 30,000 uncompressed bales, and the average loading—just think of it!—was less than 25 bales to the car, notwithstanding the fact that all through the list it was shown that the unit of sale was 50 bales.

Through the shippers' utter disregard of car efficiency, this company was called upon to furnish approximately 600 cars that would not have been necessary if the shippers had loaded 50 bales to the car. That a standard box car, 35 feet in length, will hold 50 bales of uncompressed cotton if properly stowed there cannot be the slightest doubt. Indeed, we have had our expert loaders make careful investigations to show the ease with which a minimum of 50 bales of uncompressed cotton can be loaded in a standard car, but the trouble with the average shipper is that his interest is in loading the car in the most economical way to himself without any regard whatever to the needs of his neighbor or to the transportation expenses of the carrier.

A nation-wide campaign among the shippers and receivers themselves for a greater utilization of car efficiency might go a long way toward relieving car shortages that are existing throughout practically all of the country, but unless the campaign is accompanied by a disposition on the part of the shippers to spend a little more money in loading cars, properly storing the freight, etc., it will not accomplish very much.

E. R. OLIVER,

Assistant General Freight Agent Southern Railway.

WAS IT CAUSE AND EFFECT?

The Case Stated.

[From Manufacturers Record, July 12.]

Indeed, German insurance companies operating in this country are actually insuring the ships which go out from American ports to Europe, and in doing this they have to be advised of the name of the ship, its cargo and its destination, and yet the Navy Department and the War Department held up their hands in horror when it was found out that Germany knew every move we were making!

These are some of the things that are being done on the Atlantic coast not only at New York, but at other ports, and, indeed, throughout the entire country.

The Action Taken.

[Extract from the President's Proclamation, issued July 14.]

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the powers vested in me as such, hereby declare and proclaim that such branch establishments of German insurance companies now engaged in the transaction of business in the United States pursuant to the laws of the several States are hereby prohibited from continuing the transaction of the business of marine and war risk insurance either as direct insurers or reinsurers.

BUILD SHIPS DESPITE IDLE TALK.

MR. BERNARD N. BAKER of Baltimore has demonstrated his unfitness to criticize the shipbuilding program of the Government, because in an interview demanding that Chairman Denman of the Shipping Board should be required to get out he says:

There is no doubt of the absolute impracticability of the wooden-ship program. It is slower than the program for steel ships. It has been so long since wooden ships were in general use that it is impossible now to get men who know how to build them.

In these statements Mr. Baker has shown an unfitness for a discussion of the shipbuilding program certainly as great as that which he credits to Mr. Denman for his position.

Wooden ships are in use, wooden ships are under construction and a large supply of men are available for building wooden ships.

There are many shipyards in the United States, from Maine to Texas and on the Pacific Coast, where wooden ships are being built at the present time. They are being built for private capitalists who realize their value. They are being put into the world's trade. Wooden ships did all the business of the world prior to the day of the steel ship, and for any man identified as Mr. Baker was years ago with ship-owning interests to make the statement which he has put forth indicates that he is not at all in touch with the real situation, nor does he know the extent to which wooden shipbuilding is now being carried on.

Mr. Baker says that steel ships can be built very much more rapidly than wooden ships. Suppose that were true, though it is not, it would not in the slightest minimize the importance of building wooden ships. Until Mr. Baker and General Goethals and others who have been displaying a sad lack of appreciation of the real situation recognize that our country's life is at stake, and that the life of the Allies is at stake for lack of ships, the whole nation will not be awakened to the supreme necessity of building ships of steel and ships of wood as rapidly as it is possible to construct them.

If every energy of the nation be thrown into shipbuilding we still will not be able to accomplish as much as should be done to leave any margin of safety whatever.

Incidentally, an interesting illustration as to the uses which wooden ships are now being put to is found in a letter in the New York Sun of July 18, in which a correspondent, referring to the many square-riggers in port as a rare sight to those who have long been accustomed to steamers only, says that he counted four Norwegian square-riggers,

three ships and a bark, and four other square-riggers, and adds that not in twenty years has he seen so many ships of this class in New York's harbor at one time. At anchorage there were eleven big schooners, from the two-master to the six-master.

These boats, of course, were all wooden. Many of them are engaged in foreign trade. Most of them will be loaded in New York and sent to Europe and other parts of the world, and they are only an indication of the wide use to which wooden ships are now being put in the commerce of the world, and yet Mr. Baker says that wooden ships are valueless! Men who own these ships and are operating them do not agree with him.

THE STEEL CORPORATION AND ITS RELATION TO THE NATION IN SHIP-BUILDING AND STEEL PRODUCTION.

RUMORS continue to multiply that the United States Steel Corporation will establish a shipbuilding plant at Mobile. It is known that an engineering company of New Orleans has secured an option on some thousand acres of land adjacent to Mobile, and rumor persists in connecting these options with a report that the Steel Corporation is to build a great ship plant at that point. As the Steel Corporation is letting contracts for the building at Fairfield, near Birmingham, of plants for the manufacture of ship materials, it would be most appropriate for that company to establish a shipbuilding plant, or even more than one plant, on the Gulf or Southern Atlantic Coast.

The nation has a right to call upon the Steel Corporation, controlling so large a supply of the raw materials and of the producing capacity of the country, to bend its uttermost energies to the building of ships and to increasing its production of steel.

We have faith enough in the patriotism and broad views of Judge Gary and those associated with him in the management of that great organization to believe that they will measure up to this responsibility, and that the full power of the Steel Corporation will be thrown into increased production of iron and steel and shipbuilding. If this were not true, then the Steel Corporation, as the great world leader in metallurgy, would prove recreant to its responsibility to the nation and to the world.

LOWEST CORN SUPPLY IN HISTORY OF CENTRAL WEST.

IN the light of our statements made last week in regard to the foolishly unwise reports put out from Washington about the prospective yield of our grain and other food crops, calculated to create an entirely false impression, comes a remarkable statement from official sources in Washington to the effect that "the supplies of corn in the central West have reached the lowest point ever known," and the confirmation of this statement is found in the following figures, as given from these same official sources:

The five corn-producing States of Iowa, Illinois, Ohio, Indiana and Nebraska had on hand at that date but 357,000,000 bushels, as compared with an average of 467,000,000 bushels for the nine preceding years, or a decrease in the reserve for these five States of 24 per cent. This is the smallest reserve by 15,000,000 bushels during that period, the smallest being in 1914, when it fell to 372,000,000 bushels. The largest crop was in 1913, when it reached 621,000,000 bushels. Iowa's corn reserve for 1917 has decreased 15 per cent. from the nine-year average.

Illinois' reserve shows a decrease of 37 per cent., and is the smallest reserve in the entire ten years by 11,000,000 bushels.

Ohio's reserve is a decrease of 45 per cent. from the nine-year average, and is 29 per cent. less than the previous low record for that period.

Indiana's reserve is a decrease of 23 per cent. from the nine-year average, and only in one year, 1908, was the reserve less, and then only by a million bushels.

Nebraska alone shows an increase, and that of only 4 per cent.

POWDERED SULPHUR AS A FERTILIZER.

THE recent article by Mr. Courtenay DeKalb, written from San Francisco, where he is at present stationed, in regard to the remarkable experiments which have been made in the use of powdered sulphur as a fertilizer, has continued to attract increasing attention.

Mr. J. D. McLean of Red Springs, N. C., writing on the subject to the MANUFACTURERS RECORD, says:

I have read with the greatest interest the article by Mr. DeKalb on sulphur as a plant food. Am very anxious to try it on cotton, as we are now paying \$90 per ton for nitrate of soda at the ports. It will be of untold benefit to the cotton farmers if sulphur will take the place of soda, even in a measure. Please give me some names of manufacturers or dealers who can make immediate delivery of crude sulphur or brimstone in ton lots.

In a further letter from Mr. DeKalb on the subject he says:

I am interested in seeing how you have used the recent revelations as to the effect of sulphur on soils which will bring about a revolution in agriculture, and will go far in solving the nitrate and potash problems, if, indeed, it does not prove, so far as those two substances are concerned, a complete agricultural solution. Incidentally, I may add that the manufacturers of sulphuric acid, who would be affected by the spread of the practice of using sulphur, could very readily change parts of their plants so as to use their present pyrite burners and go ahead burning pyrite to make elemental sulphur. It does not mean that their entire plants and all of their preparations for obtaining raw materials would be superseded.

I hope that the Government will get behind this sulphur problem immediately, for we can produce enormous quantities of sulphur and affect distribution in time for fertilizing this autumn to boost our grain crop next spring and be ready for an enlarged crop of legumes. You may be sure, however, that unless the matter is forced the old namby-pamby policy will be pursued and the real thing that would produce results will be side-tracked.

Replying to Mr. McLean's inquiry, it may be said that at present 98 per cent. of the entire sulphur output of the United States is produced by the Union Sulphur Co. of Louisiana and the Freeport Sulphur Co. of Freeport, Tex., both of these companies having their head offices in New York. The demand upon them for sulphur for war purposes and for the usual interests into which sulphur goes have, we believe, absorbed their entire output, but whether their producing capacity can be increased promptly enough to meet the needs of this situation we cannot say.

There are a number of other companies that are trying to develop sulphur properties. Some companies have been very unwise adopting wild promotion schemes for floating stock on the claims of almost boundless profits in sulphur production. These companies are likely to do the whole sulphur industry great harm, while causing loss to unfortunate investors.

Nevertheless, there is room for the legitimate development of good sulphur properties. Mr. DeKalb, who has had long experience as a mining engineer, chemist and geologist, in his recent article urged the development of gypsum properties carrying sulphur, thus combining the gypsum and the sulphur for immediate use for agricultural purposes.

In some way this development should be brought about immediately, and Mr. DeKalb's view is that it should be done by the Government in order to insure adequate development promptly. But the MANUFACTURERS RECORD has far more faith in the ability of big capitalists to do this promptly than it has in any effort to enlist the Government in a scheme of such magnitude and of such prospective value.

The incessant delays in Congress and in Washington generally, the wrangling and the squabbling that have gone on, do not create confidence in the ability of the Government to take hold of a situation of this kind.

It would seem desirable for the capitalists who control the two properties now putting out 98 per cent. of the sulphur in the country, and who have command of an abundance of capital, or of other men of equal financial strength, or of some of the great fertilizing interests, to investigate the situation as outlined by Mr. DeKalb immediately, and, if these investigations are satisfactory, develop this gypsum-sulphur potentiality as rapidly as possible to meet the world's hunger for food.

HOW GERMANY MAKES WAR.

IN the May issue of the National Geographic Magazine Mr. Frederick Walcott gives some facts in regard to the way in which Germany makes war, startling in their horror if we have not already reached a point where nothing that Germany does can startle us. In the course of his article Mr. Walcott says:

I went into Belgium to investigate conditions, and while there I had opportunities to talk with the leading German officials. Among others I had a talk one day with Governor-General von Bissing, who died three or four weeks ago, a man 72 or 73 years old, a man steeped in the "system," born and bred to the hardening of the heart which that philosophy develops. There ought to be some new word coined for the process that a man's heart undergoes when it becomes steeped in that system.

I said to him: "Governor, what are you going to do if England and France stop giving these people money to purchase food?"

He said: "We have got that all worked out and have had it worked out for weeks, because we have expected this system to break down at any time."

He went on to say: "Starvation will grip these people in thirty to sixty days. Starvation is a compelling force, and we would use that force to compel the Belgian workmen, many of them very skilled, to go into Germany to replace the Germans, so that they could go to the front and fight against the English and the French."

"As fast as our railway transportation could carry them, we would transport thousands of others that would be fit for agricultural work across Europe, down into South-eastern Europe, into Mesopotamia, where we have huge, splendid irrigation works. All that land needs is water and it will blossom like the rose."

RIDGING THE LAND OF THE WEAK.

"The weak remaining, the old and the young, we would concentrate opposite the firing line, and put firing squads back of them, and force them through that line, so that the English and French could take care of their own people."

It was a perfectly simple, direct, frank reasoning. It meant that the German Government would use any force in the destruction of any people not its own to further its own ends.

I had never thought in such terms. I had read Von Bernhardi and others, but I did not believe them, and the whole point of view was new, but gradually the truth of it all began to dawn upon me.

Going from Belgium to Poland, Mr. Walcott tells the story of the loss by the Russians of Lodz and the horrors which followed. On this point he says:

I motored along those roads, the two running toward Petrograd and the one toward Moscow. The German officers and the Poles who were with me, with whom I consulted, agreed in this estimate, that in about six weeks' time, a year ago last fall, approximately 1,000,000 people along that southern road were made homeless by the burning of their dwellings, and of this 1,000,000 people at least 400,000 died in the flight along that one road.

Of the balance approximately half were saved and gathered by the Germans later into refugee camps, and today, according to the Central Relief Committee of Poland, approximately 750,000 of those miserable refugees who escaped with the Russian army are now in Russia, many of them in Siberia, and more dead than alive.

HUMAN BONES FOR FERTILIZER.

It is those people whom the committee has been trying to relieve, because nobody has been able to get food or help to Russian Poland proper, with the exception of one undertaking of the Rockefeller Foundation.

As I motored along that road, only a few weeks after that terrible retreat, I began to realize something of what had happened. Both sides of the road were completely lined for the whole 230 miles with mud-covered and rain-soaked clothing. The bones had been cleaned by the crows, which are in that country by countless thousands. It is a rich alluvial country. Three-quarters of the people are agriculturists and one-quarter industrial.

The Prussians had come along and gathered up the larger bones because they were useful to them as phosphates and fertilizer. The little finger bones and toe bones were still there with the rags of clothing.

The little wicker baby baskets that hold the baby as he swings by a rope or chain from the rafters of the peasant's cottage were there by hundreds upon hundreds. I started counting them for the first mile or two and gave up in despair because there were so many.

We began to investigate the conditions of those who were still alive, those refugees who were homeless. We saw no buildings in that whole 230 miles. Everything had been destroyed; nothing but the bare chimney, black and

charred, was standing; no livestock, no farm implements, in all that vast area.

I saw with my own eyes between 50,000 and 60,000 of those refugees who had been gathered together, about a thousand to a building, in rude, hardly weatherproof, barracks hurriedly put up by the Germans.

I took this matter up with the Governor-General and asked him what it meant.

He said: "I do not know; I have to sign so many of those things; but," he continued, "go to the Governor-General of the Warsaw district and he will tell you the whole story."

I went there in a rage, and when he told me that those were the facts, I got up and said:

"General, I cannot discuss this thing with you; it is worse than anything I ever heard of. I did not suppose any civilized nation would be guilty of such a thing as this," and I started to walk out.

He said, "Wait a minute; I want to explain this thing to you. We do not look at it as you do. STARVATION IS A GREAT FORCE, AND IF WE CAN USE THAT TO THE ADVANTAGE OF THE GERMAN GOVERNMENT WE ARE GOING TO USE IT."

"Furthermore, this is a rich alluvial country. We have wanted it and needed it for a long time, and if these people die off through starvation, perhaps a lot of German people will overflow into this country and settle here; and after the war, if we have to give up Poland, the question of the liberty of Poland will be solved forever because it will be a German province."

This deliberate plan of the German military machine to use starvation in order to destroy the Belgians and Poles with a view to populating these countries with Germans in the cold-blooded way in which one of the German generals stated the case, as quoted by Mr. Walcott, is so inhuman that it would seem almost impossible to believe that any man on earth could be guilty of deliberately making statements of this kind, or that any Government should follow such a policy, if we had not already learned that all of this is in direct keeping with what Germany has been doing since the beginning of the war and will continue to do until completely conquered.

ADDED TO THE SUM TOTAL.

THE recent wreck on the Seaboard Air Line in which four lives were lost, and two engines and an immense amount of rolling stock and freight were destroyed, appears to have been easily accounted for. The telegraph operator at Franklington was in a stupidly drunken condition when he received orders to stop and sidetrack an extra train, failed to change the signals and permitted the extra to speed by to meet a coming freight. This revelation caused much indignation at Franklington and the young man was taken to Raleigh, and will have trial on charge of manslaughter. One can scarcely comment on the distressing cause of the collision in calmness of mind. The heaping of reproach would come as a natural consequence, but what more is to be said than that a tortured conscience and a wrecked life is added to the sum total of the Franklington disaster?—The Evening Journal, Richmond, Va.

A great "deal more is to be said" in connection with this and every similar case. Men holding positions of trust on railroads, or other positions of responsibility, become murderers when they drink and lose the power of handling their responsible task.

We must cease to regard the drunkard as excusable for crimes committed while drunk. If the drunkard persists in drinking, which is responsible for accidents, resulting in the death or the wounding of other people, we must compel punishment that will keep him from drinking.

The man who deliberately becomes a drunkard and thus commits crime or makes a mistake which results in injury to others is just as blameworthy as the man who does these things when sober, because he deliberately bemuddles his own brain, knowing the dangers therefrom.

But there is something else "to be said" on the subject, and that is, that every government, national, State or city, which is a co-partner with the liquor traffic is responsible for encouraging drunkenness, and therefore is responsible for helping drunken men to commit crimes and manslaughter. The official in a prohibition community who does not rigidly enforce the law, regardless of friend or enemy, and regardless of whether the enforcement of it would mean endangering his own life, is a coward and a perjurer, since he violates his oath of office.

When these facts sink deep into the conscience of the people this country will no longer be an upholder and a co-partner in any phase of the liquor traffic.

OVERSTRAINED SENTIMENT.

THE Virginian-Pilot of Norfolk states the case so clearly in regard to our war with Germany that we republish in full its editorial on the subject, in which it rightly states the case against the mawkish sentiment that we must not fight with righteous wrath—hate, if one so prefers it—against the barbarism of Germans and Germany. This is a war unto death of barbarism or civilization. It is a war of humanity against murder, outrage and every other vile crime, and it must be fought with a full realization of that fact. Discussing this subject, the Virginian-Pilot says:

"Secretary Daniels in addressing the graduating class at the Naval Academy was at great pains to enlarge upon and emphasize the distinction drawn by President Wilson between the German Government and the German people. He said:

"We are going to war without passion, without hatred, without lust for land, without a trace of vengeance. We do not hate the people we are to fight. We hate only the autocracy which harnesses them to the juggernaut."

"This declaration is entirely too broad to be accepted as an accurate representation of the feeling animating the American nation in dedicating their lives and fortunes to the purpose of freeing the world from the reign of blood which Germany has inaugurated without justifying provocation and is conducting with fiendish cruelty. If Mr. Daniels really feels no passionate resentment towards the millions of German instruments of Germany's deliberate and persistent violation of all the laws of God and man, and if he contemplates the record of murder and rapine without righteous hatred as well of the crimes as of the criminals who commit them and the accessories before and after the fact, the people whose compliance makes them possible and whose approval ensures their repetition; if his soul harbors no wish to wreak just vengeance on principals and accomplices in creation of the conditions which have forced the United States to throw her sword into the scale against the nation—the masses of her people thereto aiding and abetting—which has adopted methods of warfare that are a relapse to savagery—then we humbly conceive that Mr. Daniels fails to interpret the feeling and purpose with which the loyal millions of Americans have authorized and demanded that their sons should go forth to range themselves on foreign fields of battle with the powers that are striving to wrest from Germany the ability to work further evil. That end is to be attained only by heavy application to the offenders of the hand of vengeance. The mission of our soldiers in France will be to slay the subservient agents and executors of the Kaiser's will, to punish them so severely that they cannot, if they would, continue to carry on their works of wholesale demolition and indiscriminate slaughter of the innocent and helpless. Differentiation can not be made between the autocracy that conceives and ordains and the subservient socialism and bastard democracy which are willing coadjutors which actually perpetrate unspeakable enormities. If the Secretary views this matter in any different light than that the Army and Navy of the United States are to be ministers of holy wrath and just retribution he needs to be told as Priscilla told John Alden, to speak for himself. He certainly does not voice the feeling of that great majority of America's citizenship which is to pay the price in blood and treasure of war with Germany."

"There's a distinction proper to be drawn. An incident in American history exemplifies it. When the Spaniards had ruthlessly exterminated a French settlement on the Southern coast and established in its place a colony of adventurers from Leon and Castille, they invoked speedy and just retribution. A French fleet arrived in Cuban waters and the Admiral was informed of the cruel fate which had been meted out to his hapless countrymen. He set sail for the scene of massacre, killed in combat the Spanish who offered resistance, hanged the rest to the same gibbets from which the bodies of their recent victims were still swinging and affixed to each gallows a placard bearing this inscription:

"This is done not as to Spanish, but to murderers and assassins, cutthroats and pirates."

"So the German, as such, is not amenable to wrath and penalty. There are allowances and exceptions to be made. But the German subject, whether in military service or in civil life, who sustains by word or act the infamous policies ordered and pursued by the German Government, can not be regarded as other than particeps criminis and is not to be dissociated from the malign authority to which he yields eager service. Those elements of the German people which hailed with devilish exultation the deep damnation of the Lusitania's taking off deserve to suffer retributive penalty just as fully as those counselors of Beelzebub who had planned the tragedy and those minions of perdition who did the hellish work. If the German people wish to divorce their destiny from that of the dynasty which is drawing them to perdition, it is up to them to do it. The forces of the universe are leagued against them, not because they are Germans, but because they lend themselves to the accomplishment of aims that if attained would relegate humanity to the subjection of might and rebuild the thrones of feudalism on the wrecks of individual and collective liberty. That attainment cannot be interrupted except by misconstruction of the motives which lie behind it. Germany must be conquered, and with it must be brought to nothingness all Germans in Germany or elsewhere who do the will of German autocracy."

PATRIOTISM AND PROFIT.

A few days ago a prominent banker, a man of broad views and generally of wise views, heartily commended President Wilson in his vigorous criticism of ocean freight rates.

President Wilson had stated that the ship owners of the United States and other ocean carriers whose example they have followed, "are doing everything that high freight rates can do to make the war a failure." President Wilson added, "The thing has happened, naturally enough, because the commercial processes which we are content to see operate in ordinary times have, without sufficient thought, been continued into a period where they have no proper place," and then he demanded that the shipping interests shall adjust freight rates, in keeping with the spirit of the men who are offering their lives as a sacrifice in the war.

The bank president took the ground that as bankers were allowed to charge but 6 per cent. for money, manufacturers should not be permitted to charge a larger percentage of profit on their products. His attention was called to the fact that while the limit of 6 per cent. prevailed as to the lending of money, there was no limit whatsoever as to the profit to be earned on the bank's capital for the benefit of its stockholders. He was asked the question if the Government limited the investment of money in the establishment of banks to 6 per cent., did he for a moment suppose that any more banks would be established on that basis when the stockholders would have to take the risk of unprofitable years and no possible increase of earnings beyond 6 per cent.

He had to admit that that was another phase of the subject, and he had entirely overlooked that in talking about 6 per cent. profit on products. It is true that in some States the law limits the rate of interest to be charged by a bank to 6 per cent., but there is absolutely no limit to the rate of profit that may be earned on the bank's capital, and any bank that does not earn more than 6 per cent. over a period of years, would not be at all inviting to capitalists, nor would any capital be found for new banks on any such basis.

But the line of reasoning first advanced by the banker is in keeping with much of the reasoning that is put forth in these days about business operations. The banker was joining with the President in denouncing ship owners because they are getting a high rate of freight. It is true that this rate is exorbitant; it is true that when a vessel returns safely from the submarine zone the freight produces an enormous profit to the owner. A rate of freight which would enable all the products of the world outside of Germany and Austria and Turkey to be freely shipped from one country to another at a low rate of freight would be desirable, but that is not possible under existing conditions.

Economic theories are interesting and at times plausible, but sometimes hard facts are too stubborn for economic theorists.

The ship owners of this country can only engage in world trade in the same way as the ship owners of other countries. Suppose, for instance, an American ship owner offered to carry freight at one-half of the prevailing rate. His generosity would not in the slightest effect the world's freight because not merely one ship, nor hundreds of ships could supply the needs of the world's trade, and when shippers are bidding for vessels regardless of the freight rate, the individual ship owner cannot cut his rates to any advantage to the world.

If we could conceive that all the ship owners of all the countries of the world could unite to sell their freight space at one-half of the rate now prevailing, we might bring about an economic condition of enormous value to the world, but that is not a possibility.

The man who has a million dollars invested in a ship knows that every round-trip that can be made will bring him an enormous profit. It is true, as President Wilson suggested, that he takes out war insurance against the destruction of the ship, but he cannot take out war insurance in favor of the profits that he would make if his ship returns from the voyage without being sunk. So long as his million-dollar ship is afloat he can insure against

the destruction of that particular investment, but he cannot insure against the loss of profits which would come through the destruction of the ship. He is, therefore, not merely protecting his capital, but his prospective future profits.

That is a phase of the matter which President Wilson seems to have overlooked. If the Government with its supreme authority should immediately take over every ship and if England should do the same and the two countries unite to cut rates in half, or to an even greater extent, an entirely different situation would be presented, but we doubt seriously whether any benefit would accrue therefrom.

This country is already trying to do too many things. It must leave some things to the law of business and of supply and demand. It must permit the tremendous stimulation of shipbuilding by inciting the cupidity of men of money to put the last dollar that they can raise into the building of ships; it must incite the cupidity of farmers by co-operating to see that they can get not a moderate price but a high price for their wheat and corn and possibly other staples. Unless it follows this policy we shall not have an increase of shipping to meet the world's needs; we shall not have a sufficient increase in food supplies to save the world from starvation, and we shall not have an expansion of iron and steel and coal production sufficient to take care of the world's crying needs.

If it were possible to turn this Government and those of the Allies into purely socialistic combinations and do everything through the Government and by the Government and for the Government we might possibly largely curtail the price of commodities and of freight rates, but the end would be disastrous and end in ultimate defeat. On the other hand, we must have the utmost possible co-operation of the man who is moved wholly by patriotism; of the man who is moved wholly or in part by cupidity, and of all others in between these two classes, to stretch to the utmost the constructive activities and the production of food supplies upon which the nation depends.

There are some millions of Germans and pro-German farmers in this country. The high price of wheat would cause their cupidity to put in a large acreage for next year's wheat crop, but nothing but this cupidity would tempt them to do it. There are a great many others in this country who, to a greater or less extent, will be moved by cupidity, and there is no power on earth to change their natures. The thing to do is to make the best of the situation and make their cupidity produce the things the nation needs.

Even the patriotic man might have, say \$100,000, and feel that the future of his family and perchance of his sons who have been sent into the Army, will entirely depend on the maintenance of this fortune. He will for these very sons husband it in every way possible. He will not, because of them, take undue risks with any part of it. If, however, the opportunity to make a big profit out of a portion of it by investment in enlarged operations in manufacturing or in farming were presented to him he would be willing to take a risk on a part of it when otherwise he would feel patriotically justified in not doing so and in retaining all of it, looking forward to the time when the death or wounding of the sons that he has sent into the war would throw upon him a larger burden in caring for the families of those killed, or in caring for those who may be wounded or blinded or unable to earn their own living.

Many a father who today sees his sons going into the Army, is looking forward as never before with a desire to accumulate and save something to make their burden in after life a little easier than it would be if he had not saved.

All of these facts must be borne in mind. There are many currents and cross currents in the great question of prices.

We give to President Wilson the utmost credit for the highest patriotic desire in his effort to put patriotism above profit, but while beautiful in theory and in part practicable to some extent, and to that extent he is more than justified, his statement of the case is not wholly practicable and the country should not expect that the entire plan can ever work out fully.

Commenting on this situation the New York Journal of Commerce says:

What is the remedy? It may be practicable for the Government to requisition merchant shipping and combine its operation in a single system under some form of central management. Charges may be made uniform for like service and the aggregate income distributed on some plan regarded as equitable and adequate for a fair profit. But that would not increase the supply of shipping or diminish the demand for its use, and it would be extremely difficult, in fact absolutely impossible, to insure equal and exact justice to all with such varying conditions as no man or set of men could control. It is possible that matters would be improved so far as they concerned the Government's interests in its part in the war operations; but the only means of anything like complete relief lies in a rapid increase in the volume of shipping; and the surest means of that is good freight rates.

SHIPS COULD BE BUILT ON OHIO AND MISSISSIPPI RIVERS.

IN the supreme need of ships every agency that can be made to utilize the shipbuilding facilities of the country must be made available. In this connection, Mr. C. H. Crawford, assistant engineer Nashville, Chattanooga & St. Louis Railway, writes the MANUFACTURERS RECORD that there are a number of old wooden shipyards on the Mississippi and the Ohio rivers, with a few skilled shipwrights available, which could be used for the building of wooden ships. He says "materials, money, men and facilities enough, considering the emergency, are available."

In olden days the Ohio and Mississippi river shipyards built many big steamers, and the shipwrights still living in the neighborhood of these yards would at the present time be available for taking untrained labor and utilizing it in the building of wooden ships.

It is not possible for this Government, even by the uttermost stretch of its power of men and money, to build enough ships. All that we can do will fall short of the needs of the hour. It is therefore important that every unutilized or abandoned shipyard which can be revived and turned to building of ships should be made at present to do its part in this work of saving the world.

Mr. Crawford's suggestion should receive the attention of the country as well as of financial and shipbuilding interests generally.

NEW ENGLAND'S SPIRIT OF PATRIOTISM

WRITING to the MANUFACTURERS RECORD in regard to the spirit of patriotism prevailing throughout New England, a business man of that section says:

We have had our best boys in the service from the first year of the pilgrims, and they are enlisting now by the hundred—the very cream of our young men from every occupation and village of New England.

That riot on Boston Commons? A lot of young enlisted men, not yet in Federal service, punished to the queen's taste a crowd of miserable foreign socialists who floated their banners in the faces of American boys. We think we are sorry, but there is no one I have heard of who is. The men who marched in that socialist parade were four-fifths of German ancestry, and their manner, talk and bearing were downright treason and should have been considered treasonable and punishment administered in proper form. They bore at the head just one American flag and dozens of red ones following.

The crowd made hundreds of these paraders, men and women, kiss that one flag, and if they did not care to do that, then the women were escorted hence under guard and most of the men went to the hospital.

But everyone who had to take a licking was taken one side and cared for naturally by men who enjoyed the task. I suppose it was all a disgraceful proceeding, but I wish some of you could have shared it with us.

So long as the Government will not suppress rank treason, there is some satisfaction in knowing that individuals will do so, and we are rather inclined to share with our New England correspondent a nominal regret at the effort to suppress these traitors, but deep down in our heart there is a feeling of thankfulness that there are enough real American men on the job in Boston to see that treason was suppressed in this way.

THE SOLDIERS' QUESTION: "WE HAVE GIVEN OURSELVES. WHAT WILL YOU GIVE?"

TO a group of New York's leading bankers a leading worker for the Young Men's Christian Association, who had been in the trenches and seen the heroism of the soldiers, and who had learned to appreciate the marvelous consecration of these men as they offered their lives in the great battle for civilization, said:

"In the light of what I have seen of self-sacrifice, of heroism, there is not one of you in this room worthy to blacken the shoes of the men who are in the trenches."

This was said to a group of men of the highest morality, of a patriotism which has led the nation, of broad generosity in giving to the work of the Red Cross and the Young Men's Christian Association and kindred interests, and giving not by thousands, but by millions. It was not an exaggerated statement, but it was made for the purpose of trying to impress upon these great bankers that the man who gives only of his money, even though he gives deeply of his principal, is giving less than the men who are so willingly giving their lives. The superb sacrifice of 7,000,000 men whose bodies have already covered the battlefields of Europe, while millions of wounded have suffered untold agonies on the battlefields and in hospitals, calls the world as nothing else in all human history of the last nineteen centuries to sacrifice that it may serve.

The man or woman who, facing the awful realities of this war can move along in his or her accustomed way, seeking to accumulate money, or to pass his or her time in the pleasures or the frivolities or even the usual routine of duties, has not at all grasped the significance of the agony and tragedy through which the world is passing.

Some thousands of American soldiers have already landed in France, and other thousands, and hundreds of thousands and millions will have to follow. These men are not at all unmindful of the reality of the struggle upon which they are entering. Each one knows full well that he is offering his life; and if perchance he be saved to return to his loved ones, comrades all around him and by his side he knows will die. Each man realizes fully that he is going into a war for service. These men are not going from any thoughtless desire for adventure; they are not going without a full understanding of what it means to lie in the trenches day after day and night after night, and crawl out over the trenches to and through the barbed wires and struggle in a great death grapple. These things are before them, and yet they go forward with a courage which should stir every latent quality of good in every human heart. Before such men those who cannot go should stand with uncovered heads and bemoan the fate that makes it necessary for them to be saved by the sacrifice of the lives of others.

These are the living realities, the verities, of this hour. They call in thunder tones to the nation. They call to every human heart to honor the soldiers and the sailors; to throw around them every possible safeguard to protect them from every temptation; to make their task as light as possible; to furnish every comfort and convenience; to lighten their work and lessen their sorrows; to provide the means for their healthful enjoyment around every camp, and to banish from every camp the accursed liquor traffic and all the evils which follow; to provide the nurses and the stretcher-bearers, and the physicians, and the hospitals which may minister unto them in hours of agony; to provide the facilities for the training of the body and mind afforded by the Young Men's Christian Association in every camp.

For these things the American people must work wholeheartedly, with an enthusiasm which matches that of the men in the battle line.

Out of the nation's work and the wealth that may be accumulated therefrom must be poured to the fullest limit the money needed for these things.

A few weeks ago Maryland troops on a parade

In the interest of the Liberty Loan carried a banner on which was inscribed:

**"We have given ourselves.
What will you give?"**

That is the question which the life of every soldier puts before every man and woman in this country.

What will you give to the men who are giving their lives? What service will you render to them to lessen their burdens, to lighten their homesickness, to soften their agony on the battlefield, to save their bodies and to save their souls? What answer will the American people give to the question "We have given ourselves; what will you give?"

BALTIMORE SCHOOLS ELIMINATE STUDY OF GERMAN.

BALTIMORE has had in its public school system for forty years ten English-German schools where German was the dominant thought. This city has now taken the first step toward eliminating the study of the German language from these public-school hotbeds of German influence and teaching known as our English-German schools. Last week, after a vigorous contest and debate, the School Board decided to abolish German in the first six grades of the elementary schools, but to restrict it in the seventh grade by providing that classes must have a sufficient number of scholars to warrant continuing its study. This arrangement will continue until the closing of the schools next summer, after which the study of German will be abolished in the seventh grade, although it will be continued in the eighth grade under the restriction just adopted for the seventh. The meetings of the Board are private, but it is stated that the decision was practically unanimous. One report said that the vote was 7 to 1. It is expected that the study of German will eventually be eliminated from all of the elementary schools.

This action of the Baltimore School Commissioners is the result of agitation, especially strong since the declaration of a state of war between the United States and Germany, to check in every way possible the German propaganda which has been as active in America as if it were inspired by a religious body instead of by a political organization. It was felt that to continue the study of German in the schools would tend to preserve the German atmosphere and to establish the German point of view among the scholars much in the same fashion that belief in Kaiserism has been established in the minds of the inhabitants of the German Empire. Instances have already been observed in this country in which natives who have come under the German influence and instruction have been seriously affected in their trend of political thought, to the extent that they displayed a weakened devotion to the principles of democracy as expressed in the Constitution of the United States. The insidious methods of the German propagandists in all parts of society in this country have been bad enough, without permitting them to have the opportunity of poisoning the minds of children with noxious political, not to say moral, ideas, for the spoken justification of the crimes committed by German military forces is just as much an undermining of morality as deliberate instigation to such deeds would be.

But in addition to the general feeling among the public that German study should be discontinued in the public schools, there was also a practical side to the subject from the viewpoint of educators. All of the pupils in the classes did not study German; it was not compulsory, and consequently when lessons in German were being heard or instruction in that language was being imparted the other scholars in the classes were practically idle, according to a member of the School Board who has investigated the workings of the schools. Moreover, the need for pursuing the study of German in the schools does not exist now, if it ever did. When it was taken up many years ago there may have been justification for it, for then there were large numbers of German immigrants arriving with numerous progeny, who of necessity had to learn English, and German teachers already familiar with the English

language were those who could best make them acquainted with their new environment and its speech.

Citizens of the United States who were born in Germany should understand that this action is not born of hatred of the German language itself, for its study is continued and will be continued in Baltimore schools for advanced scholars, just as French is studied. The schools might just as well establish classes in Italian or in Russian as to persist in the study of German in the minor grades.

WOLF VON IGEL, GERMAN PLOTTER.

IN Carl W. Ackerman's recently-published book, "Germany, the Next Republic," which he wrote after having served as a correspondent at Berlin for the United Press Associations of this country, he says:

I recall one time learning at the American Embassy that a man named Wolf von Igel had asked Ambassador Gerard for a safe conduct, on the ground that he was going to the United States to try and have condensed milk shipped to Germany for the children. Mr. Gerard refused to ask Washington to grant this man a safe conduct. I did not learn until several months afterwards that Herr von Igel had been asked to go to the United States by Under-Secretary of State Zimmermann for one of two purposes: either he was to purchase a controlling interest in the Du Pont powder mills, no matter what that cost, or he was to stir up dissatisfaction in Mexico. Zimmermann gave him a card of introduction to Count von Bernstorff, the German Ambassador in Washington, and told him that the German Embassy would supply him with all necessary funds.

It now appears that Wolf von Igel was here very recently, and is doubtless still in this country. He was, it is stated, in New York during the first week of July, as the following, taken from last week's issue of Commerce and Finance of that city, shows:

Count von Bernstorff is not here to direct the work and throw the shield of his ambassadorial cloak about the dynamiters, the torch lighters and the inciters of strike, but it seems various of his assistants remain.

The secret service agents made a raid a year ago on the headquarters of Wolf von Igel at 60 Wall street and got evidence that made clear many things in connection with the blowing up of American factories, the sinking of American, British and other ships through the use of infernal machines, mysterious explosions on piers, explosions in which several lives were lost. Mr. von Bernstorff demanded the return of the evidence. He declared von Igel's office was the New York branch of the German Embassy and, therefore, sacred. Washington, not being ready to break with Germany, acceded to this demand.

Von Igel was supposed to have gone back to Germany with Bernstorff.

He was in New York last week.

That is all that these two publications say about this interesting chap, but it is enough. And there are many other Wolf von Igels going about this country doing deadly work against the sending of our troops to Europe. They stop at nothing. Murder is a joke to them. Wholesale slaughter by means of secretly-placed bombs or other infernal machines delights them.

Are these fellows going about like conspirators in a play, with stealthy tread, hats drawn down over eyes, and so forth? Not much. They are as friendly, sociable and apparently frank as anyone you ever met, but their minds are filled with plans for the blackest of crimes, which their hearts approve.

The United States Secret Service will in time get many of them, but it is the duty of every American to keep his eyes and his ears alert to detect these emissaries of the blackest monarchical organization which the world has ever seen, and to advise the agents of our Government accordingly.

Such an emissary may not be a German! He may be a Dane, a Hollander, a Swede or a Norwegian, perhaps a Bulgarian, for the Germans learned long ago to employ spies of other nationalities as particularly well suited to their plans; he might even be a Frenchman, an Englishman, a Russian or an American. The latter seems too horrible to think of, but we have had plenty of evidence to prove that there are among our own people such as are contemptible enough to do such work, and who have been doing it for nearly three years. Some of them are in high places, and some who, if not truly spies, are still pro-German, are even in high places in Washington.

THE PATRIOTISM OF AMERICAN BUSINESS LEADERS.

WE must and do recognize that, in every branch of our work, personal gain and individual convenience are and must be made secondary to patriotic duty.

The foregoing statement, taken from an announcement made by the National Fertilizer Association at its meeting in Virginia last week, typifies the thought of the business men of this country. The iron and steel people, the coal operators, the shipbuilders, the cotton manufacturers and all other great business leaders in the country have expressed, in one way or another, their full recognition of the position so clearly stated by the National Fertilizer Association.

Indeed, President Wilson's call to the business people of the country, to put patriotism above profit, was scarcely needed, for, while here and there there may be men who are putting profit above patriotism, they are the exception. The men who have led in the creation of the best business activities of this country—in railroad operations, in manufacturing, in finance as well as in other lines of human endeavor—have likewise been the leaders in patriotism. They have not only offered their lives, their fortunes and their honor to the nation, but they have offered what is infinitely dearer than their wealth—their sons, and when within the limit of the army age they have offered themselves—and there is not a man whose son has been offered to the nation who would not infinitely have preferred to be able to take his son's place and risk his own life that, perchance, his son's life might be saved.

A few days ago a navy officer told the MANUFACTURERS RECORD that while at Annapolis the day before he met three young men, and, stopping to chat with them for a few moments, seeing that they were evidently somewhat new to the situation, he found that all three had just enlisted for a brief, intensive training, in order to fit them for such naval work as might be feasible to university graduates after three months of naval training. These men had entered on exactly the same basis as the poorest man who might enlist in the Navy. He found that one of them was the only son of the greatest banker in New York; the other a son of a great Boston banker, and the other was of similar financial and social rank. But these young men had dedicated their lives to their country's service.

A few days ago the papers mentioned the fact that Vincent Astor was serving as an ensign on one of the submarine-chasing boats over on the other side, while the sons of Marshall Field, the greatest dry goods merchant America ever produced, promptly enlisted as privates at the beginning of the war. The fact that these young men, whose money runs into the millions and the tens of millions, have offered their lives to the country, prepared to endure every hardship that might come to the poorest man, and to risk their lives in exactly the same way that the poorest will have to risk theirs, is but an illustration of the spirit which has pervaded the most highly-educated circles of America from the day when the United States committed itself to this mighty contest.

It is an interesting fact that, the higher the degree of education of the man or of the community, the greater has been the spirit of patriotism and self-sacrifice. Wherever there is lack of patriotism in the individual or in the community, it may with safety be said that there is lack of intelligent, broad education.

The college and university men of wealth, and those who have had the opportunity of studying world problems, have been the ones who have most quickly responded to the call of the country. They have demonstrated that money has not sapped the vitality of American manhood; that money has not destroyed the patriotism of the young men of the land, and, with all of the privileges which boundless wealth has conferred upon them, they have held that duty to the nation was the supreme test of character, and they have measured up to the call.

It is of profound significance that in this great war the business men of the country, like these young men of wealth and education, fully recognize

their responsibility to the nation, and are concentrating their business activities, as so clearly stated by the National Fertilizer Association in its official announcement, so that "in every branch of its work personal gain and individual convenience must be made secondary to patriotic duty."

In recognizing the fact that every industry as well as every individual is today called upon for full service to the nation, the fertilizer manufacturers pledged themselves "to co-operate fully and freely, in all ways possible, in any and all movements which will help to win the war." That is the spirit with which the iron and steel men pledged themselves to the Government, and pledged the utmost possible output of their product to the Government at any price which the Government might fix, regardless of the much higher prices which are being actively bid by private consumers in this country and abroad; and the lumber operators of the country, even in advance of the steel men, had taken a position equally as patriotic.

When the nation thus proves its real manhood as distinct from the few demagogues who have cursed some parts of the land—north, east, south and west—and some whose presence in Congress is a disgrace to that body by the course which its great leaders have taken, leaders in the pulpit and in the pew, leaders in the bank and in the counting-room, leaders in the executive management of great industries and leaders among the men who do the physical work, we can begin to see that there is coming a fusing of life into one great, solid, compact body. Our nation is being made one in spirit and in thought, a nation in which the arbitrary dividing lines between the rich and the poor, the educated and the uneducated, are being melted out, and we are coming to realize that a man is a man, and that his value counts not for his money, not even for his education, but for his true manhood. Out of the war will come this development of the great brotherhood of mankind and a dedication of our lives to the cause of humanity which will tell upon the world's history for all the centuries to come.

Amid the sorrows which engulf the world we may well take heart and think of this, the brighter side, which glorifies humanity in this hour of suffering.

WALKING STRAIGHT TOWARD A STARVATION PRECIPICE, BLINDED BY IGNORANCE.

WITH an intimate study, covering more than 35 years, of agricultural conditions in this country, the MANUFACTURERS RECORD has for the last two years been urging with all the power at its command the supreme necessity of increasing our food production. Over and over again we have tried to arouse the national Government and State governments to the tremendous issue at stake.

The world is walking straight to a precipice, and it is not far from the edge of a famine of such fearful proportions that the horrors of the war itself might be surpassed by the horrors which would come from the riots and bloodshed following actual starvation conditions. It is possible that we might see duplicated in this country and in other countries food conditions as terrific as those in Belgium without any great outside power to save the world from starvation, as England and the United States saved Belgium from complete starvation.

In the MANUFACTURERS RECORD last week we gave some statistics showing how far short of our actual needs are the indications of this year's food crops despite the unwise and unjustified optimistic reports sent out by the Department of Agriculture.

That editorial has called forth from Mr. H. E. Horton, Agricultural Commissioner of the American Steel & Wire Co., the remarkable statements published on our cover page and worth duplicating here. They demand the nation's attention. They merely confirm, however, what the MANUFACTURERS RECORD has been claiming and do not in the slightest, we believe, exaggerate the seriousness of the situation.

So far as we have been able to learn no other business concern in America, not even the International Harvester Company, with its splendid

organization, has put out during the last six months or more, such constant, intelligent presentation of the food situation as the American Steel & Wire Company.

Unceasingly this organization has proclaimed the necessity of enlarged food crops to meet the serious crisis before it is too late. "Mr. Horton's telegram is as follows:

Chicago, Ill., July 16.

Editor Manufacturers Record:

Your crop editorial July 12 expresses our views. I have been greatly worried on recognizing the earmarks of inspired articles issued from Washington on rosy outlook. Vrooman is sent over the country and talks right, but at the same time Washington sends out its piffle. I believe we are entering the most dangerous period for our potato crop when a night may blast a nation's hope.

What special efforts are the Government and State officials making for spraying? None. The critical moment for corn is delayed two weeks. What of the weather on the later date? We are up in the air on any corn estimates.

At this moment a propaganda to prepare winter grain lands for 1918 should be well under way, but there is nothing doing; everybody is asleep. Knowing the lack of vision as to the meaning of agricultural statistics and the slipshod method of collection, I do not place confidence in Washington figures.

In the spring farmers brag of the big acreage they have put in; in the fall they brag of the big yields on the small acreage. Nothing has happened this year to change human nature, and Washington has the advantage of the returns.

What's to be done?

(A) Divorce the Department of Agriculture from handling the proposition.

Give us a man. Belgium's need of Hoover was nothing compared with our present needs.

(B) Work night and day to force home-drying of vegetables.

(C) Spray potatoes for blight and bug.

(D) Prepare to dry every available potato, sweet and Irish.

(E) Teach eating cornmeal.

(F) Give prominence to Vrooman's talk and call off Department optimists.

H. E. HORTON,

Agricultural Commissioner,
American Steel & Wire Co.

VIRGINIA FURNACES BUYING LAKE SUPERIOR IRON ORES.

VIRGINIA furnaces are buying very heavily of Lake ores, which are being laid down at the furnaces at a cost of about \$7 per ton.

The high price of coke and the delay in opening ore mines in the South promptly enough to meet the heavily-increasing demand has caused these furnaces to turn to Lake Superior for ore supplies, thus intensifying the nation's demand upon the lake region for ore. With the high prices now prevailing for coke, the furnaces are trying to get as much high-grade ore as possible in order to reduce their coke consumption.

With the certainty, so far as human knowledge can foresee, of a long-continued demand, at high prices, for iron and steel, every good ore property in the South should be adequately investigated, and wherever developments can be made advantageously the work should be pushed. Out of present conditions the South should be able to put its iron and steel industry on a much stronger basis than in the past and greatly increase the output. For this section, or any portion of it, to have to look to the Lake Superior district for an ore supply in a time such as this is unfortunate, not only because of the failure to utilize, to a large extent, Southern ores, but because the dependence upon the Lake district by the steel industry of the United States is too great for the safety of the country.

The demand for iron is so unceasing, with buyers constantly raising their bid prices, that all long-abandoned furnaces in this section, some of which have been out of blast for ten or fifteen years or more, are being taken over by people who believe they can utilize them profitably at present iron prices and lay the foundation for continued operation, at least so long as the world is hungry, as it now is, for iron. There are not in sight, however, any evidences of active building of new furnaces or the organization of new iron and steel companies in the central South excepting the \$11,000,000 proposed to be expended by the Steel Corporation in the enlargement of its plant in Alabama. This is a mere bagatelle to the amount that should be expended for increasing the iron and steel output of the South.

ADVERTISING AS VIEWED BY LEADING ADVERTISERS.

A LARGE number of leading business men of the country, representing such concerns as the Remington Typewriter Co., the Firestone Tire & Rubber Co., Wells-Fargo & Co., the National Lead Co. and many others have an organization known as the Association of National Advertisers, Inc.

The president of this company, Mr. A. C. Reiley of the Remington Typewriter Co., and the executive committee have recently issued some facts in regard to advertising which should be carefully studied by business men generally. In this letter they say:

"We do not think that we can exaggerate the importance or the timeliness of the subject which it treats. One of the errors most deeply ingrained in the public mind is an erroneous idea of the supposedly enormous sums paid for advertising, which many believe increases the price to the consumer of all advertised articles and thus constitutes an important factor in the higher cost of living.

"Our association has been able to collect facts and figures from its members which show the absolute error of this view. We believe that publishers and advertisers alike have a vital interest in bringing these facts to the attention of the public, especially at this time, when so much legislation vitally concerning the publishing and advertising interest is under consideration."

In the course of this discussion of the subject of advertising as issued by the Association of National Advertisers, the following interesting statements are made:

"The favorite plaint of the business man who has fallen asleep by the wayside is that advertising is a huge economic waste; that millions of dollars are spent and wasted in artificial attempts to stimulate selling, to the ultimate injury of both buyer and seller. At first glance, and to the man who has not really studied the subject, this argument may appear logical. The only trouble with the logic is that it does not square with the facts. Most people know more things that are not so about this subject than any other under the sun."

"Let us see how much the big advertisers spend," says Mr. Reiley. "The average man hears talk every day about the millions and millions spent for advertising, and he finally gets the notion that somehow or other the buyer has got to pay for it.

"I wonder if Mr. Average Man ever stops to realize that those millions spent in advertising sell hundreds of millions worth of goods—goods that could never be sold so cheaply in any other way. And it is this immense saving in selling cost that helps to make lower-priced goods.

"'Millions spent for advertising' sounds big, but 'hundreds of millions worth of goods sold by advertising' makes the actual amount spent for advertising look small.

"What is the exact ratio of advertising to sales, anyhow? This is something that every buyer would like to know.

"I am glad to be able to tell the public. The Association of National Advertisers has collected some valuable facts and figures on this subject. Listen to a few of them.

"The advertising of one of the leading paint manufacturers of the country averages 3½ per cent. of their total sales. In other words, for every dollar's worth of paint they sell they spend 3½ cents in advertising. This is about equivalent to the price of a postage stamp and a cent's worth of paper for every dollar's worth of goods sold. Another big paint and varnish manufacturer spends from 3½ to 4½ per cent.

"Next take clothing. We have obtained figures concerning two of the biggest clothing manufacturers in the country. One spends 1½ per cent., the other 2 per cent. An equally prominent shoe manufacturer spends 1½ per cent.

"'But shoes and clothing are necessities,' you say. 'How about the luxuries?'"

"All right. Take one of the most popular luxuries in the world—candy. One of the best-known candy-makers in the country and one of the biggest advertisers, spends 5 per cent.

"Then take the big automobile and tire manufacturers, with their full page and double page spreads.

Surely now the percentage figures will begin to jump. Will they?"

"You will be surprised when I give you the figures for two of the most famous automobile builders in the country. One is 2 per cent., the other is 3 per cent. Also two of the leading tire manufacturers; one spends 2 per cent., the other 2 per cent. And all four rank among the biggest advertisers in the country.

"These figures are authentic, and when you consider the enormous volume of the automobile and tire business you will see that the small percentages are ample to provide for the wonderful publicity.

"And then we come to the big department stores, where at one time or another every buyer buys. You can see them fairly eating up the newspapers with their big spreads. But if you expect to find big percentage figures here, again you will be agreeably disappointed. The figures possessed by the Association of National Advertisers show that the average department store's advertising does not cost more than 3 per cent. of its total business.

"The fact is that the great majority of all nationally-advertised articles—articles which are familiarly known in every home in the country, which are famous for their quality as well as their immense distribution, belong in the 5 per cent. or under class.

"And let this final point be remembered. Even if this advertising represented a direct advance on what the buyer would otherwise have to pay, this would make little difference in the price of the goods. But it does not. And why not?"

"Because advertising is the most efficient method of marketing ever developed by business enterprise, therefore its effect is to decrease and not to increase the sum total of selling cost. This is a simple fact about advertising that every buyer of advertised goods ought to know."

GERMANY'S CONSTITUTION THE GREAT BULWARK OF AUTOCRACY.

SCANTY news reports from Germany reveal increasing demands in the Reichstag for political reforms, and also of some effort by the controlling elements in the German political system, to make partial concessions to the expressed wishes of the people. How much of reform will result is problematical, for the organization of the government of the empire is such that the Emperor, the kings the princes are strongly intrenched under the constitution, and so long as the mass of the people continue their allegiance to monarchical forms they will receive little, if any, political freedom.

Notwithstanding that Germany has a constitution which to the average man of a democracy suggests that it is a document designed to secure certain rights to the people of the country, it is in reality designed to strengthen and uphold the monarchy and to give it tremendous power and authority. Students of history in educational institutions are commonly given an outline of the governmental organization of the German Empire, learning, for instance, that there are two houses of what might be called a Parliament, namely, the Bundesrath and the Reichstag, the former composed of 61 members, representing the governments of the numerous States composing the empire, and the latter of 397 members, elected by the people, and that the consent of the Reichstag is required for the passage of laws for the empire, but concerning how the system works is seldom learned in schools, and folks outside of Germany are content to know that the country has a constitutional government and, presumably, also enjoys freedom.

In practice Germany is the greatest autocracy the world has ever seen; it is the embodiment of all the strength of absolute monarchies of olden times, with the authority and power of the monarch and his satellites constitutionally granted to them, making the combination all the stronger for that fact.

Concerning the legislative operation of the Government, Charles Downer Hazen, professor of European history at Columbia University, said in a recent issue of the New York Times:

Unlike the Senate of the United States, the States of

Germany are not represented equally in the Bundesrath, but most unequally. There are 61 members. Of these Prussia has 17, and the 3 votes allotted to Alsace-Lorraine since 1911 are "instructed" by the Emperor. Thus Prussia has 20, Bavaria has 6, Saxony and Wurttemberg 4 each, others 3 or 2, and seventeen of the States only 1 apiece. The members are really diplomats, representing the numerous monarchs of Germany.

They do not vote individually, but each State delegation votes as a unit and as the ruler orders it to. Thus the votes that Prussia controls are cast always as a unit and as the King of Prussia directs. The Bundesrath is in reality an assembly of the sovereigns of Germany. It is responsible to nothing on earth and its powers are very extensive. It is the most important element of the Legislature, as most legislation begins in it; its consent is necessary, and every law passed by the Reichstag is, after that, submitted to it for ratification or rejection. It is, therefore, the chief source of legislation. The Princes of Germany have an absolute veto upon the only popular element in the Government, the Reichstag. Representing the Princes of Germany, the Bundesrath is a thoroughly monarchical institution, a bulwark of the monarchical spirit. The proceedings of this princely assembly are secret, which is one reason why we know and hear less about it than we do about the Reichstag. . . .

The powers of the Reichstag are vastly inferior to the powers of the House of Commons, or the Chamber of Deputies, or the House of Representatives. While it, in conjunction with the Bundesrath, votes the appropriations, certain ones, notably those for the army, are voted for a period of years. Its consent is required for new taxes, whereas taxes previously levied continue to be collected without the consent of Parliament being again secured. . . .

But the fundamental evil is that the elections to the Reichstag result in the creation of an assembly politically impotent, which does not control the executive and whose powers of legislation are subject to an absolute veto by the Bundesrath; that is, by the reigning Princes, big and little. German government is government by the Emperor and the dynasties, with the consent of the Reichstag, a consent which in practice can be forced, if not given voluntarily, for the Bundesrath has the power of dissolving the Reichstag whenever it wishes to, a power always efficacious thus far. The German governing classes, the Princes, the bureaucracy, agree with Moltke, who said that the real ballot was the cartridge which the German soldier carried in his cartridge box; that the real representative of the nation was the army."

This outline of the German governmental system reveals the conspicuous fact that in practice the Reichstag merely expresses the wishes of the people, who have already been trained through long education from childhood to hold unshaken belief in the political system of the country and to desire only those things which shall not interfere with its preservation and its strength. Now and then a man of independent thought is developed in the Reichstag, but there has hitherto always been an overwhelming majority among its members to squelch him if he became really troublesome to the powers who possess the real authority in the realm. Therefore, so long as the German constitution is preserved, so long there will not be any real freedom for the people of Germany, even if the law relating to elections for the Reichstag is amended to give the masses of the population proportionately the same representation that the Junkers now enjoy in that body. The Bundesrath will continue to control the situation, and the Emperor and his satellites will remain supreme.

ITS WORK AS VIEWED BY A MANUFACTURER.

J. G. TILLEY, president and treasurer Twin City J. Boiler Works, Bristol, Va., in a letter under date of July 14, says:

Enclosed please find our check for \$1 covering our subscription to your publication.

We wish to congratulate you on your very strong and interesting editorials. It is a great pity that every Congressman and United States Senator, and even every member of President Wilson's Cabinet, are not readers of the MANUFACTURERS RECORD. You would be doing a great patriotic duty if you could mail each one a copy of this week's issue. You state facts just as they are, and the sooner we heed your suggestions the better off we will be as a nation and as a people.

Every true Southerner should be a reader of the MANUFACTURERS RECORD; it is the greatest friend of the South and her people.

As an advertising medium the MANUFACTURERS RECORD cannot be equalled. If we need a certain article and do not know where it can be secured, we merely turn to the advertisers' index, and almost invariably find where such an article can be obtained.

Best wishes for your continued success, which you so richly deserve.

GERMAN PRISONERS MADE VERY COMFORTABLE IN A NORTH CAROLINA MOUNTAIN RESORT.

WRITING from Western Carolina, a business man says:

Your position as to the proper attitude of our country toward the Germans is correct, and I do hope that our country will never show lack of spirit in dealing with those responsible for the awful tragedies being enacted.

Why not send down a reporter and look into the conditions at Hot Springs, N. C., where Germans (the same blood that is devastating the world and guilty of the unspeakable crimes) are being fed on the fat of the land and refuse to sleep two in a bed, when that bed is in a tourist hotel, being rented to the United States for \$18,000 per annum. No wonder they are docile and accept their condition without effort to get away when their housing and feeding are as good as our tourists get in peace times! I may be in gross error, but my opinion is that this is too good treatment to be accorded them, and they should be forced to accept just what aliens in their home country, Germany, are getting.

May our country perish if, at the concluding of peace terms, we fail to force the giving up of every official guilty of those things which are so horrible and their heads taken from their miserable trunks!

I cannot feel that we would ever enjoy God's blessings again if we fail to see the last one of the guilty ones perish. It should be the goal of the Allies.

I would like to know your attitude on this matter of internment camps and what the Germans should be given in food and fare.

The Germans who have been interned or imprisoned at Hot Springs have been given one of the most glorious locations in America. It is one of the garden spots of the world for climate, for scenery, for water and all other advantages which, combined, have made that region for half a century or more one of the favored recreation and health resorts of this country. The MANUFACTURERS RECORD believes in giving to prisoners, even German prisoners, good accommodations and thoroughly protecting their health, but if the statements made in this letter are correct, it would look as though the National Government is giving to these German prisoners far greater comforts than it affords to its own soldiers. If that be true, it is doing its own soldiers a rank injustice, and if the statement as to how these Germans are being treated by the Government are correct—and our correspondent is in a position to know—then we are foolishly, maudlinly, sentimentally pandering to men every one of whom would kill an American soldier at any opportunity.

We are in hearty accord with the views of our correspondent, that if this country does not insist upon the full measure of punishment due the German officials bringing on this awful war it will justly receive the condemnation of Almighty God.

We have been called into this war to save the world from murderers, and if we should, in order to secure an earlier peace, give freedom to the murderers and thus forever establish the principle that royalty must not be punished for crimes it commits in such fearful ways, we would have stamped ourselves as unworthy to be called by the Almighty to save civilization.

But why should our North Carolina correspondent complain about the maudlin sentiment which puts these German prisoners in a health resort noted for many years for its charm of location, and why should we question the right of these prisoners to demand separate beds?

Indeed it would not seem to be amiss, judged by much that we are doing and by other things that we are leaving undone, for these German prisoners to insist upon private baths with servants in attendance to minister to their needs.

There is, however, another side to the case. Inhuman methods of punishment are not recognized as proper (except by the Germans) even in war times, and it would be almost inhuman to make these German prisoners sleep two in a bed. We do not wonder that they protested against it. It must be hard enough for a German to sleep by himself or to look at himself in a mirror and see the features of a man whose nation, once honored among men, is now the most despised of all nations the world has ever known, but it would be double punishment to make him sleep with another of his race. Perchance, the clamor of these men for separate beds is one hopeful sign that some day the light of humanity and decency may yet dawn in German hearts.

Of course, in the meantime, while thus pandering to these upholders of Germany's murderous campaign of innocent women and babies, our own soldiers sleep on the ground or on straw bags, with 8 to 10 in a tent, and wait on themselves.

But who is foolish enough to expect that our own soldiers shall be treated with the degree of consideration which these German prisoners are demanding for themselves?

The leniency which our Government is showing in dealing with the German situation and the persistent efforts of Germans in this country to stir up riots and labor troubles, and in every way possible to advance Germany's interest against the interests of this country, will sooner or later, if a change is not brought about quickly, result in such widespread, burning hatred of Germans that we shall see disastrous results, to our own sorrow, in the bitterness of the destruction of many Germans.

When one of the German officials, so the story goes, undertook to tell Ambassador Gerard that the United States dare not go into war with Germany because there were five hundred thousand German reservists in this country, Gerard blandly answered that there were more than five hundred thousand lamp posts in the United States. The significance of the statement was instantly accepted by the German official.

Unless there is less of German propaganda work in this country and less effort on the part of Germans and pro-Germans to obstruct the work of this country, and unless the Government promptly deals officially and more vigorously with this situation, there will be created a spirit throughout the land which will find expression in the statement credited to Ambassador Gerard.

IF.

WADDELL & SON,
Consulting Engineers.

New York City, July 16.

Editor Manufacturers Record:

I have read with a great deal of interest your article entitled "If" in your Daily Bulletin of the 14th instant, and I feel impelled to write you a word of congratulation on this splendid article.

Your ideas as expressed in this article coincide so closely with my own in the matter, and I think that the need is so urgent for people in our country to get down to fundamentals, that it is a pity that your article is not printed by the hundreds of thousands and placed in the hands of every person capable of thinking intelligently.

F. H. FRANKLAND.

The MANUFACTURERS RECORD appreciates this commendation, as it does every similar letter. As we cannot reach the whole country with such facts as we are presenting, we might suggest that our readers can broaden the work by placing the MANUFACTURERS RECORD in the hands of their friends throughout the country for the nation's benefit if what we are saying is of national value.

THE FOOD EMBARGO TO NEUTRALS SHOULD BE RIGOROUSLY ENFORCED.

WITH the life of this country and its allies absolutely staked on our ability to provide the foodstuffs needed, there is no justification whatever for Holland and Sweden and Denmark and other neutral countries taking umbrage at the reported plan of President Wilson to cut off exports of foodstuffs to these countries.

Indeed, self-preservation, not only as an individual and as a nation, but self-preservation in the broadest sense of the world's civilization requires that we should take this step. If we had nothing but our own individual welfare to consider, humanity might demand that we should share the last crust with others, and if one had to starve, let all starve together. But the situation is different from that.

We are the protectors now of the world's civilization. Our life and civilization are at stake, and the needs of humanity demand that we should conserve our food supply as well as cotton and other things for the exclusive benefit of those who are engaged in this contest for the world's safety.

That this may bring hardships to the neutral

countries is not our fault. We have not been responsible for the bad weather that has lessened our food production to an alarming extent. We have not been responsible for the war on the world's civilization. We are compelled to care for ourselves and for our allies in this great struggle, and to ship food supplies or cotton or other things which can be used for war purposes to neutral countries at the expense of the very life blood of this nation would be a mistake; neither humanity nor Christianity demand this of us.

We have a right to withhold from Sweden and Norway and Denmark and Holland and other neutral countries everything which is necessary to our own preservation and to the winning of this war. If we had an abundant supply of foodstuffs, the situation might be different, but we have not, and we must meet the conditions which we face.

President Wilson will, therefore, we believe, be conserving the highest interests of the world if he entirely eliminates the exports of foodstuffs to any other country than to the allies who are joined with us in this world struggle. We believe, whatever might be its effect on the cotton market, he should also see that not a bale of cotton or cottonseed products goes to Germany through the neutral countries, even if he has to forbid the exportation of a single bale of cotton or a pound of cottonseed meal to those countries. It is claimed that some of these countries have been fattening cattle on our cottonseed meal and shipping the cattle to Germany. We should make this impossible.

Every resource of the nation in constructive work to help the allies and in withholding from others the things which might directly or indirectly help our enemies must be done by the nation now.

DEVELOPING EDUCATIONAL OPPORTUNITIES.

ILLITERACY in the South as a whole has long been the yellow dog at which those who have been unsuccessful in finding some real excuse for criticizing this section greatly enjoy flinging a few verbal brickbats. It is true that of the native whites of the South there is a large percentage of illiterates compared with other sections of the country, but one must also consider the high percentage of illiterates among the negro population, which makes this section's total percentage of illiterates abnormally large. Louisiana, in this instance, holds the record, with nearly half of its negroes unable to read and write. It is not the North and East, with their riches, educational advantages and closely populated districts, but the West, and more particularly the far Northwest, which has the least number of illiterates in proportion to population.

Nevertheless, the South is now spending far more on education than the United States thus spent in 1880, when its population was about 15,000,000 more than of the South at present. An illustration of some of the methods being adopted to carry on educational work is given by the Arkansas Gazette of Little Rock in an article which outlines the plans of the Arkansas Illiteracy Commission for conducting, through county superintendents, who will be asked to form county illiteracy commissions of about ten persons each, a campaign for the purpose of eliminating adult illiteracy.

The general plan as given by J. L. Bond, State Superintendent of Public Instruction, is as follows:

First—Make a survey of your school district, noting the names, ages and extent of illiterates. Ascertain how many will attend a school to learn to read and write. Enlist all over 10 years of age.

Second—Arrange for a 10 days' school at afternoon or night, as best suits the condition of the community. Moonlight nights in August suggested. Afternoons after school hours is a good time. Perhaps older pupils would be willing to remain and help.

Third—Use materials that will be placed in the hands of the County Commission by the State Commission—writing tablets, etc.

Fourth—Even adults who can read and write might like to attend and help, or study some subject on which they are interested, or if you have a library they can read, it will be more comfortable, socially, for the others.

The foregoing should be studied by every Southern State with a view to working out along similar lines some plan for reducing illiteracy among both the white and colored population.

AN OPPORTUNITY FOR COTTONSEED-OIL INTERESTS.

AT the instance of National Food Administrator Herbert C. Hoover, acting through the Interstate Cottonseed Crushers' Association, there has been created an "Interstate Cottonseed Products Council," to co-operate with the Government in the conservation of food and feed in the emergency of national defense.

Following a series of conferences between Mr. Hoover and President Fielding Wallace of the Interstate Association and the voluntary offer of the association's facilities and resources to the Government, President Wallace called a special meeting of the association's executive committee at Memphis this week, at which delegations of officers and members were present on invitation from all State associations of oil-seed crushers.

It was voted to create a council of five, as above, with President Wallace as chairman. The other four will be appointed by the president from among the leading members of the association. Mr. Hoover desires to have the council ready for conference with him as necessities may require, and this action is in accord with his policy to work with and through the large industrial organizations of the country in co-ordinating the patriotic impulses of the people for the war emergency.

To supplement the work of the Interstate Council, an "Interstate Advisory Committee" was created, consisting of the chairmen of ten State committees of five members each, the ten chairmen being named as follows:

Alabama—C. W. Ashcraft, Florence.
Arkansas—E. S. Ready, Helena.
Georgia—J. L. Benton, Monticello.
Louisiana—Bryan Bell, New Orleans.
Mississippi—E. M. Durham, Vicksburg.
North Carolina—C. L. Ives, Newbern.
Oklahoma—E. Cook, Guthrie.
South Carolina—Russell Acree, Darlington.
Tennessee—J. H. DuBose, Memphis.
Texas—C. C. Littleton, Fort Worth.

President Wallace will spend as much time in Washington as is necessary to the furtherance of the plans, but in order to concentrate the forces of co-operation a resident Washington director was appointed in the person of J. J. Culbertson of Paris, Tex., who will open headquarters in Washington and be on hand for service constantly during the war emergency.

A systematic correlation of duties is thus provided, through the president and executive committee, acting with the resident director, and the National Cottonseed Products Council, the Interstate advisory committee, the State advisory committees, the secretary of the Interstate Association at Dallas, the assistant to the president at Memphis and the various State organizations.

Indeed, it would not be a bad idea for the cottonseed-oil mill interests to call a convention in Washington, representing every cotton-mill section of the South, if not every cotton mill, now, while Congress is in session, and through this convention proclaim to the world, in every way possible, the strength of the cottonseed-oil industry as well as that of peanut and soy-bean oils, so closely connected with the cottonseed-oil industry, in largely increasing the food supply of the nation. A broad discussion in Washington at the present time by representative men of the industry might be of great value in helping to arouse the Administration, Congress and the country at large to the tremendous value of the cottonseed-oil business, and in connection therewith to the growing importance of the peanut and soy bean oil industry, all of which combine to increase the food supply of the nation to a larger extent than it has yet been possible to make the public realize.

POTASH FROM ALCOHOL WASTE.

A DISPATCH from New Orleans says that the Jefferson Distilling & Denaturing Co. has evolved a new process for the utilization of former waste in distilling alcohol from molasses for the production of by-product potash.

It has been well known that these wastes in some

lines of distillation carried potash, and vigorous efforts have been underway for months to save it. Some months ago the MANUFACTURERS RECORD received a letter from a New York firm, stating that it had solved the problem.

TIME TO STOP SPIES.

IT seems that the American Liberty Defense League of Chicago is asking churches to permit its speakers to appear in their pulpits to uphold the position of "the conscientious objector." An Illinois pastor, Rev. E. E. Hastings of Joliet, has given an answer which, in substance, should be the reply of every other pastor in the country, and asks in this reply, "Why should my son have to offer himself to protect the man who will use his 'conscience' to evade his duty?"

As a matter of fact, the people who are running the American Liberty Defense League and similar organizations haven't much conscience to disturb them. They are simply proving themselves cowards and slackers, and are willing to be saved at the cost of the lives of others. Pro-German influence doubtless controls nine-tenths of the men and women engaged in these organizations, and the other tenth lacks brains to know that it is being controlled.

The Lumber Trade Journal of New Orleans suggests that in this hour of need in the life of a nation all spies and traitors should be arrested and executed, and it includes in this list the members of the I. W. W. We think it might have included most of the members in all of these so-called peace and conscientious leagues, and the sooner the country wakes up to the desirability of executing a large proportion of them, the safer will it be for this nation and the world.

MOSQUITOES ON LONG ISLAND VS. NO MOSQUITOES IN MUCH OF SOUTH.

THE New York Sun says that the pest of mosquitoes at the military cantonment at Yaphank, Long Island, is so serious that the work of the contractors is being delayed and the health of their employees is being seriously threatened. This is said to be the worst plague of mosquitoes which has afflicted the eastern end of Long Island within recent years. Although common laborers are reported as getting \$3.75 and more a day, every train from the camp is bringing back workmen with their faces and bodies swollen from mosquito bites.

The Sun says:

Several of the contractors have become so alarmed over the situation that they have practically ceased importing workmen from New York and the Jersey cities, and they are trying to induce natives of Yaphank and surrounding territory to accept jobs, believing that they would be better able to stand the mosquitoes.

The same paper refers to the intense suffering of the troops that are stationed there, and says:

The guardsmen do their work with mosquito-netting over their faces, and sleep on net-covered cots, but the netting affords no protection to their bodies, and their legs and arms are virtually masses of stings and bites, and adds: "The outlook for the conscript who will be forced to occupy the camp during the hot days of early September is not pleasant to contemplate."

The MANUFACTURERS RECORD ventures the assertion that in not a single cantonment in the South will there be such a condition as is here outlined on Long Island. Indeed, in most of the places selected in the South mosquitoes are not a menace to comfort at any time, and in some of these places mosquitoes are scarcely known. It is fortunate that in the selection of cantonments the War Department has so wisely selected many points in the South so noted for their healthfulness as to insure the best possible conditions for the soldiers.

Instead of finding the South, as many of these soldiers anticipate, a region of intense heat and of dangers to health, they will be amazed to find the attractiveness of the South's climate, freedom from sickness, the abundance of the water supply at most points and the other advantages which will make thousands of men who now know nothing

about the South from personal experience enthusiastic lovers of the advantages of this section.

We are sorry for mosquito-ridden Long Island, and we would not unduly stress that misfortune were it not for the fact that the New York Sun, from which this item is taken, and many other Eastern and Western papers are so constantly maligning the South, and because the summer climate of this section is more thoroughly misunderstood than that of any other region in America.

THE SOUTH NOT RESPONSIBLE FOR THE CENSUS BUREAU'S BLUNDER.

THE Census Bureau's explanation as to its report, for war purposes, of the population of the different States does not explain. It is on a par with too much that has been put out from other Departments in Washington.

The claim that the population of Detroit, for instance, has jumped to 1,500,000, and that the population of many Southern States has heavily declined, is so absolutely unjustifiable that it is amazing that the Census Bureau should undertake to try to make an explanation.

If the real explanation was in an effort to try to avoid classing the negroes as a part of the population upon which to draw for an army, the statement should have been frankly made. Certainly no effort to so thoroughly misrepresent the population of the country, justly causing a belief on the part of Northern and Western States that they were being discriminated against for the benefit of the South, should have been made at such a time as this.

The South has enough unfortunate burdens to bear without being charged with the responsibility for such improper and unjustifiable statements as those issued by the Census Bureau in regard to population.

RAILROAD WAR COMBINATION EFFORTS RESULT IN GREAT SAVING IN EQUIPMENT.

THE special committee on national defense organized by the American Railway Association, or "The Railroads' War Board," as it is called, reports excellent results from its appeal to both carriers and shippers to secure the fullest possible use of freight cars. It says that reports received by it of service during April by railroads operating 51 per cent. of all the mileage in the United States (all the roads not having yet reported) show that they produced for the public 3,354,000,000, or 16 per cent., more ton miles of freight transportation than they did in the same month of last year, when business was similarly at high tide. The announcement further says:

In April the railroads showed an increase of 66 tons, or 10.4 per cent., per train, and 2.4 tons, or 10 per cent., per lading of cars, equivalent to the addition of 126,000 cars to the equipment of the roads reporting. This result was accomplished with but 4.3 per cent. more locomotive miles and 5 per cent. more freight-car miles. * * *

The Commission on Car Service has informed the Railroads' War Board that one railroad in the month of April hauled 2.92 tons more per car than in April of last year, thus saving on this one road the use of 58,473 cars. In the month of May the same railroad hauled 1414 pounds more of less-than-carload freight per car than in May, 1916. This saved 6319 cars.

Referring to the work of its inspectors, the Board says that twelve copper companies and a number of lumber-carrying roads were informed that they were not loading cars to the full capacity, an end they were asked to attain from patriotic motives alone. It further says:

Three thousand cars of cement, coal, slate and limestone on one railroad were checked to see what progress was being made in the campaign for heavier loading of cars carrying these commodities. The result showed that practically every car was hauling more than its marked capacity.

Reports show that more than 19,000 have been delivered of the 34,245 cars which the Commission on Car Service ordered sent to roads where there was a car shortage from roads on which there

was a surplus. These cars are being sent in train-load lots to the points where they are required. The shortage of freight cars in the entire country was reduced during May from 148,627 to 105,127 cars, or nearly one-third.

The Board is to be congratulated upon having achieved such gratifying economies in the use of cars, but much more remains to be done, for it has told the railroads and the public that by quickly making repairs to freight cars, by better movement of them and by heavier loading it is possible to make such a saving that it would be equivalent to adding to the supply of equipment 779,000 cars. Hence it is energetically continuing to work along these lines, and carriers and shippers are being asked to use their utmost endeavors to meet the needs of the situation. These results could never have been accomplished except for the right which the war situation has given to railroads to practically pool all of their operations in one great combination, directed by five of the foremost railroad lines of the country.

NEW PETROLEUM ACTIVITIES IN APPALACHIAN FIELD.

CRUDE petroleum marketed from the Appalachian oil district in 1916 amounted to 23,009,455 barrels, or 149,407 barrels, or .7 per cent., more than the 1915 output, according to a report issued by the United States Geological Survey. Of the two Southern States, Kentucky and West Virginia, in the Appalachian field, the former marketed 1,203,246 barrels of petroleum, including 677 barrels from Tennessee, and the latter 8,731,184 barrels.

Has the Destructiveness of Pink Boll-Worm Been Overstated?

Austin, Tex., July 13.—[Special].—Notwithstanding the fact that the pink boll-worm so far as known has not yet made its appearance in any part of the cotton-growing region of Texas, every possible precaution is being taken to prevent the possible invasion of this country by the pest.

Notwithstanding the denial by some of the cottonseed-oil manufacturers of Mexico that the pink boll-worm exists in that country, scientific experts of the United States Department of Agriculture and of the Texas State Department of Agriculture are positive in their statements that the pest is really in Mexico, and may reach this country in full force at any time if not kept out. The proposition which Dr. David F. Houston, Secretary of the Federal Department of Agriculture, has under consideration of establishing a prohibitive cotton-growing zone to border the Rio Grande and extending into the interior of Texas for about 100 miles is meeting with strong opposition on the part of the farmers located within the proposed non-growing zone. It is claimed that the enforcement of a quarantine of this character would mean an annual loss of several million dollars to the farmers who are now engaged largely in growing cotton. This loss, however, would probably be made up largely by devoting the land to other crops. In the lower Rio Grande Valley enormous yields of cotton are obtained by irrigating the plants.

In order to arrive at a definite plan of meeting the menace that is said to exist in Mexico, a conference between a number of representative farmers of different localities on the American side of the Rio Grande and Secretary Houston will be held in Washington soon. This conference will also be attended by the representatives of the Texas State Agricultural Department.

It is learned with relief here that the pink boll-worm is apparently not the destructive agency that has been pictured, at least so far as destroying the cotton crop in the famous Laguna district of Mexico is concerned. Reports from Torreon, which is the industrial center of that part of the Nazos River Valley, are to the effect that the cotton yield there this season promises to exceed that of any former year and will probably amount to 125,000 bales.

Brazil has contracted with Japan for 40,000 Japanese immigrant farm laborers. The first shipload of 1500 has already embarked.

Details of the \$11,000,000 Steel Plant Enlargements of Steel Corporation in Alabama

[Special Correspondence Manufacturers Record.]

Birmingham, Ala., July 16.

George G. Crawford, president of the Tennessee Coal, Iron & Railroad Co., has announced technical details of the immense development recommended by the finance committee of the United States Steel Corporation, and for which an appropriation of at least \$11,000,000 has been made, as follows:

"Construction will begin at once upon a group of mills designated as the Fairfield Works of the Tennessee Coal, Iron & Railroad Co. An electrically-driven reversing blooming mill will roll slabs and blooms for two finishing mills. The finishing mills consist of an electrically-driven 110-inch plate mill and an electrically-driven combination mill designed to roll shapes, bars and light rails.

"The products of the shape and plate mills will be delivered by electrically-operated telfers to large fabricating shops.

"The mills are selected to produce the products which are particularly required in connection with the conduct of the war.

"The location selected for the Fairfield Works is in Possum Valley, southwest of the Fairfield by-product ovens.

"The housing of the employees of the new mills will be provided for in part by the company through the construction of houses for about 600 families. The total number of houses required will be very considerably in excess of this number.

"TENNESSEE COAL, IRON & RAILROAD CO.,

"GEO. G. CRAWFORD, President."

Actual work has been started on the development, the preliminary work being in the line of extending water mains and preparing sites. Erection of houses for em-

ployes will be a task, and several hundred building artisans will be kept busy for quite a while. Something like 11,000,000 feet of lumber will be purchased. It is understood that as the development of the plants goes on the residential section of the new community will be given every attention along lines of civic conveniences, the welfare program of the Tennessee company at all of its plants in the Birmingham district to be maintained, if not improved upon, right from the start.

Material is being ordered for the plants, and inasmuch as it is intended to produce products which are particularly required in connection with the conduct of the war, no time is to be lost in getting them up and in operation. A large corps of engineers and draughtsmen have been at work for several weeks, and are still working on the plans, and a number of blueprints are now being gone over by contractors and others with the idea of rushing the work.

It is understood that other preliminaries to the necessary work is under way. Another pumping station of the big water-works system of the Tennessee Coal, Iron & Railroad Co. has been established, and there will be an extension of the Birmingham Southern Railroad to handle such business as may be required. Excavation work will be considerable, and this is being started on.

It is further understood that other industries will follow this development, and the report will not down that the \$11,000,000 appropriated is but a circumstance of what is going to be expended in the developments proposed for the Birmingham district by the Steel Corporation through its subsidiary organization, the Tennessee Coal, Iron & Railroad Co.

More than 2200 men are to be ultimately employed in the new plants.

Dixie Steel Corporation.

Details are being determined for the plant of the Dixie Steel Corporation, New Orleans, mentioned last week as organized with a capitalization of \$500,000. The company plans to construct a 200x60-foot steel-frame and corrugated-iron building to be equipped with a plant having a daily capacity of 200 tons on three eight-hour shifts, the output to be bar steel, angles, squares, billets, nuts, bolts, etc. It contemplates that the machinery will include rolling mill driven direct by individual electric motors, electric traveling crane equipped for electric magnet to unload and handle scrap metal and automatic charging apparatus, the estimated cost of the plant being \$250,000. All kinds of scrap metal will be utilized in manufacturing the products named. The new company's officers are: B. W. Seidel, president; J. A. Stubbs and John G. Gross, vice-presidents; Joseph L. Walle, treasurer; G. J. Capdevielle, secretary.

Wants Roosevelt to Help Guard Us Against Enemies at Home.

C. M. COOK, Charlotte, N. C.

I have been a reader of your valuable paper, the MANUFACTURERS RECORD, for the past six or seven years, and about the only thing that I have read in your paper that I could not agree with you on was an item I read some time ago on the question of Japanese immigration to this country for labor purposes.

I do not believe in this immigration business, and I want to say right here that there are a lot of other people in this country of the same mind on this particular question, even if they do not express it publicly. Let America work out her problems of labor with Americans only.

Another thing that I wish to say in this connection is that I heartily commend you for your stand on preparedness. I have been reading your editorials on preparedness for a long time, and I believe if our Government had adopted your ideas and advice along this line we would be in better shape today to cope with the

mighty problems that confront us. You will remember how Colonel Roosevelt advocated preparedness about four years ago, and how some of the papers throughout the country railed at him for his suggestions, but don't you think our country would have been in better shape today to meet our enemies if they had taken a little of his advice along this line? I for one would like to have seen him take his division of volunteers to France. We would in all probability have been hearing from him now.

But the main thing I wanted to write you about was an article on page 47 in your issue of July 12, under the head of a "Director of Public Safety to Guard Us Against Alien Enemies." To me, there are words in this piece of advice as valuable as nuggets of gold. And what you state in regard to President Wilson being overtaxed with weighty problems must certainly be true, and how long he can stand up under these burdens no one knows. In my opinion, there is no one in all America today who could handle this particular and gigantic task of public safety as well as Colonel Roosevelt. His vim, coupled with his wisdom and far-sightedness and fairness in dealing with great problems concerning the people, have commanded for him the respect of the whole civilized world. I am heartily with you when you say that we ought to lay aside politics and pull together for the common good of all the people of these United States of America and our allies. Let such men as Colonel Roosevelt, with his vast store of experience and wisdom, together with all other great men in this country, pull together to down the enemy and make the world safe for freedom and liberty.

I bid you Godspeed in your efforts along this line, and trust the day will soon come when we can celebrate the victory.

The International Institute of Agriculture, Ottawa, Ontario, Canada, reports receipt of estimates of foreign wheat yields as follows: India, 479,300,000 bushels, 19 per cent. over 1916 crop; France, 161,674,000 bushels, 25 per cent. less than in 1916; Japan, 26,533,000, 6 per cent. less than in 1916.

Suggestions as to Unsinkable Ships

By W. W. STORM, Superintendent Wilmington Iron Works, Wilmington, N. C.

In order to safeguard our present fleet of merchantmen against submarine attack, ships must be protected from without or within. The latter method has possibilities, in that part of the cargo space below the water line could be sacrificed so that all space above could be utilized for cargo purposes. This could be accomplished by filling up the hold to and slightly above the water line with the lightest obtainable substance that could be solidified by a plastic binder (for example, sawdust mixed with plaster of paris). The weights of such a mixture, together with the proper amount of ballast, would make it possible to add to the above water line cargo capacity without producing topheaviness. Perhaps it would not be necessary to sacrifice the entire space below the water line by filling it as mentioned above. Along these lines vertical cylinders, about five or six feet in diameter, could be spaced on seven or eight-foot centers and the mixture placed around them. It is apparent that such containers would add to the cargo capacity without destroying the idea originally involved.

The best method of filling the hold and surrounding the cylindrical containers would be by using bricks of the aforesaid mixture and cementing them together in the same manner that clay bricks are made to adhere in standard construction. This is advisable because any mass requiring the use of water would take too long to dry out and the weight of the water would make the mixture too heavy. By using the special brick all of the water would be eliminated, leaving a perfectly dry and lighter than water composition.

It is a matter of simple detail to make the prepared bricks water-resisting and non-inflammable, two features which would have to be overcome.

As to the machinery and boilers being elevated above the water line, no serious problems present themselves other than connecting the elevated crankshaft and the intermediate shaft, which could be done by means of gears or universal joints.

One of the advantages in connection with the materials entering into the construction of the proposed bricks is that they are available in unlimited quantities. We have no end of trees which are of but little commercial value which when ground up in hogs would make just what is needed. The use of cotton mixed with a binder could also be considered.

If the above suggestion is carried out it would be practically impossible to sink a ship, even if her sides were torn open in many places, for the reason that the hull would not accommodate an inflow of water.

To demonstrate that the above is not a fallacy, take a tin bucket and fill it up part way with a lighter-than-water substance of a solidified nature. If the bottom of the bucket is removed, the container will still float. Many holes in the sides of the bucket would not cause it to sink.

The above idea has some merit, as it is a fact that recognized authorities on the subject say that a vessel attacked by a submarine has three chances:

1. Invisibility (smoke clouds, etc.)
2. Protection from torpedoes and mines.
3. Unsinkability.

In final support of the idea, it is a certainty that a vessel's speed will not be greatly reduced, and whereas the cargo would be restricted, a speedily delivered cargo of small tonnage has many advantages over a large tonnage cargo and a long uncertain delivery due to any

methods of protection depending on projections from the sides of the ship.

The above can be applied to transports, trawlers and all boats passing through the war zone.

An Endorsement of Storm's Ideas.

By J. R. EDDY of Tidewater Power Co.

"Mr. Walter Storm, the superintendent of the Wilmington Iron Works, called at the office this morning and was good enough to permit of my reviewing the enclosed communication covering ways and means for making our merchant ships unsinkable.

"The scheme will work; we have got to turn these elemental ideas over to publicity forces; the MANUFACTURERS RECORD is today a world-wide force in the field of constructive publicity.

"I am acting for Mr. Storm in mailing you his communication, and I trust that you will afford the idea full publicity. We will get somewhere if we can at once organize such a clearing-house as proposed editorially in 'Industrial Management' for July. Let every good American offer what he can and then have full publicity afforded for complete discussion, and then allow action to follow when it is made clear that the new proposals have high defensive merit.

"It is evident that submarines would have to come at very close range, and thus give our gunners opportunity to return fire, if they are compelled to operate against unsinkable ships. We can develop a wonderful offensive against submarines if when attacked by them our ships refuse to go under. It would give the Germans pause to find themselves pitted against boats that failed to sink. Trials of this principle should at once be made, big, life-sized, open-face trials, that all of the world could look at; let us get away from the laboratory and come into the open and do our test work.

"I am enclosing copy of bill today being mailed Senator McCumber, dealing with ship protectors. The Senator was dead right in his speech of May 15. I believe that such a bill as the enclosed, if offered by him now, will have support in Congress, and that we will find the big steel people, the elevator people, the cable conveyor people and many other manufacturers disposed to assign their designers to the particular job set forth as the object of the bill. When we commercialize these projects, we head them toward immediate action.

"You have been doing a magnificent work, and all of your subscribers look for a continuance of the drive you are making for national safety and international well-being among men.

"Mr. Storm is mailing you under separate cover a sample of his material. As he states, there are many other materials that can serve as well, but by dropping the sample he is sending you in a bucket you will at once see how readily it floats.

"As a final work, it occurs to me to add that dummy ships, made unsinkable by the methods outlined by Mr. Storm, could be floated about the submarine infested zones and made to serve as blinds to invite the useless expenditure of expensive torpedoes by the Germans.

"Mr. Storm is a graduate mechanical engineer. The Wilmington Iron Works commenced the construction of two large steamships which are now building on the Cape Fear River. He has been giving much consideration to the problem now causing concern to all the world. I am much indebted to him for assistance in connection with sustained interest in the subject of mechanical protectors for ships designed to explode the torpedo at a distance from ships.

"Mr. L. C. Becker, local agent and manager of the Clyde Steamship Line, after conferring with officers who have supervised construction of and navigated ships on his line, believes it wholly practicable to protect ships with protectors designed to let down from the sides of ships. It remains only to have proper provision made for adequate tests as provided in the enclosed draft of a bill."

The bill as proposed is as follows:

AN ACT TO ENABLE THE GOVERNMENT OF THE UNITED STATES TO SECURE MEANS TO PROTECT AMERICAN SHIPPING FROM THE ATTACKS OF SUBMARINE TORPEDOES.

BE IT ENACTED BY THE SENATE OF THE UNITED STATES, THE HOUSE OF REPRESENTATIVES CONCURRING:

Section 1. That the Secretary of the Navy and the United States Shipping Board be and they are hereby constituted a Special Board, duly authorized, empowered and directed to immediately procure, by lease, purchase or any other means found necessary by said Board, one ocean-going merchant vessel for the purpose of equipping the same with mechanically-adjusted appliances designed to render ineffective attacks by submarines with torpedoes, such vessel so equipped to be used for the purpose of testing out said mechanical appliances.

Sec. 2. That in order to secure the most effective protective device or devices for such merchant ship the said Board is hereby directed to at once call for submission of designs from manufacturers and others engaged in industries using steel, iron or other suitable and available materials, and from such designs so submitted select one or more, as may be approved by the said Board, and cause same to be applied to said vessel and subjected to such necessary torpedo-resisting and maneuvering tests as are required to determine its practicability.

Sec. 3. That the sum of three millions of dollars, or so much thereof as may be necessary, be and the same is hereby appropriated out of any moneys in the treasury of the United States, not otherwise appropriated, to enable the said Board to secure and adequately and speedily equip the aforesaid American merchant ship with practical mechanical protection against submarine torpedo attacks, and to provide adequate means and all necessary labor, skilled or otherwise, material and equipment for carrying out the tests hereinbefore set forth.

Sec. 4. That the said Board be and it is hereby authorized and empowered to pay to the owner or owners of the design or device which may be accepted and approved for trial tests such sum or sums as, in the discretion of said Board, may be provided in a special form of contract.

Sec. 5. That this Act shall be in force from and after its ratification.

The Portland Cement Industry and Some of Its Present Handicaps.

Great activity in the Portland cement industry during the first half of this year is reported by the United States Geological Survey, notwithstanding that prices are higher than they have been for 19 years. Production and shipments from practically all mills have considerably exceeded those for the corresponding period of 1916, which during the whole year produced 91,521,000 barrels of cement and shipped 94,552,000 barrels.

The present strong demand for cement is said to come principally from small consumers in the agricultural districts, although much cement is going into roads and pavements.

The war in Europe has apparently not yet much affected the demand for cement. Factory construction has taken a moderate quantity, but the demand directly for military purposes seems not to have been notably great, although it will doubtless become greater as the war progresses and as the United States takes a larger part in it.

The prices of cement, however, have been greatly influenced by the war. The increase in the cost of fuel has been out of all proportion to the increase in the selling price of cement. It is reported that of late the fuel cost per barrel for burning clinker in the Lehigh district has been greater than the entire cost of manufacturing cement three years ago. Everywhere also the increase in the cost of labor, mill supplies, machinery, explosives, bags and other things essential to the cement industry are reported to be proportionately greater than the increase in the selling price, so that manufacturers are not obtaining large profits.

Though wages are generally good, there is scarcely a cement plant which is not suffering from shortage of labor. Freight embargoes and car shortage have also retarded or prevented shipments of cement to certain markets and have hindered or interrupted the operations of most mills through delays in the delivery of fuel and mill supplies.

Whether or not the output for 1917 will break the previous high record—that of 92,097,000 tons in 1913—cannot now be predicted. The month of June has shown a slight abatement of demand from small consumers in certain districts, attributable in part to the entry of the United States into the war, to the prospect of increased taxation and to the purchase of Liberty bonds. General building and improvement work is likely to be curtailed or postponed at times of high prices and uncertain deliveries.

The Nitrate Situation Up in the Air

[Special Correspondence Manufacturers Record.]

Washington, D. C., July 17.

There will be no manufacture of nitrate by the Government for many months to come.

Neither will the \$20,000,000 nitrate plant, provided for by legislation after a thorough consideration of the country's needs, be erected by the Government until some indefinite date, possibly far ahead.

As a third proposition, it appears that the utilization of some fraction of the practically immeasurable water-power now running to waste may not be resorted to in connection with the manufacture of nitrates when the plant is erected.

As the situation now stands, there will be expended, by direction of the President, the sum of \$4,000,000 for "certain plants" for the production of nitrates from atmospheric nitrogen.

In the statement issued by Secretary of War Baker on July 16 it was further set forth that the amount mentioned was to be taken from the appropriation of \$20,000,000 for the erection of the Government nitrate plant. The disposition of the remaining \$16,000,000 is "undesignated." It is not even indicated in the statement by Secretary Baker that the "certain plants" to be constructed are experimental, but it is made clear that they "do not involve the use of water-power."

The statement mentioned apparently disposes of the report by the Secretaries of War, Interior and Agriculture, constituting the Nitrate Plant Committee, in which 11 sites out of the 270 sites investigated were recommended for consideration in passing on the desirability of a location for the Government nitrate plant that would have in mind water-power availability, proximity of the necessary minerals, labor conditions and other factors essential to the successful conduct of the project.

Secretary of War Baker's statement of July 16 reads as follows:

By direction of the President, certain plants will be immediately constructed for the production of nitrates from atmospheric nitrogen. The plants to be constructed do not involve the use of water-power, but use a process which is a modification of processes previously known, and the total expenditure involved in these projects is about \$4,000,000. Nothing further can be said at this time about the process or the location of the works which are to be constructed. Of the total amount appropriated by Congress, namely, \$20,000,000, substantially \$16,000,000 remains undesignated as to expenditure by the President. The committee, consisting of the Secretaries of War, Interior and Agriculture, to which the President referred the question of the selection of a site or sites for the development of water-power, has made no report to the President on that subject, but is engaged in the making of further engineering studies, and the subject is temporarily closed to further discussion by localities and communities desiring to be considered as possible sites for the plants.

This statement entirely alters the construction placed on the reports receiving current acceptance at the beginning of last week, to the effect that the interdepartmental nitrate board had made a report to the President based upon the investigations made by the Board of Army Engineers, recommending that the plant be located at one of the following 11 points:

1. Black Warrior River in Alabama.
2. Muscle Shoals in Alabama.
3. Near Knoxville, on the Holston River.
4. New River in Southwest Virginia.
5. Ohio River at Louisville.
6. Chattahoochee River in Alabama and Georgia.
7. At Cartersville, Ga.
8. At Rome, Ga.
9. Columbia, S. C., on Congaree River.
10. At Augusta, Ga., on Savannah River.
11. Complete steam plant for nitrate at Wheeling, W. Va.

The report, which was further quoted and regarding which premature conclusions were spread broadcast throughout the South, was to the effect that no permanent plant should be located for the present, but that "experiments" in the cyanide and synthetic processes of nitrate production were to be conducted. The sites for these "experimental plants" were variously suggested, New River, Va., and the upper Holston, near Knoxville, being specified as places suitable for the experiments.

It is evident, however, from the later statement issued by Secretary Baker, that no report was made by the board to the President on prospective site or sites for the plant.

It is equally obvious that no such report or recommendation is to be expected in the near future. On

that point, as the Secretary of War indicates, "the subject is temporarily closed," pending the making of further engineering studies.

While the entire statement is somewhat cryptic in its nature, it may logically be drawn from its contents that the interdepartmental board has quietly laid aside the report of the army engineers beyond that portion recommending the utilization of \$4,000,000 at the present time for the erection of "certain plants" for producing nitrates by a combination of processes now employed, regarding which no further information is given than that it does not involve the use of water-power.

This, it would seem, affords ample justification for the assertion that the ambitious project involved in a Government appropriation of \$20,000,000 has been cut down to one-fifth of that magnitude. The remaining \$16,000,000 are ignored. The President has directed the expenditure of the \$4,000,000 in the manner recommended by the board. Nothing is said about the rest, except that its disposition is as yet undesignated. While reference is made to further studies of an engineering nature, there would appear to be grounds for the inference that water-power is to play no essential part in these studies. On this point, however, nothing either in confirmation or denial could be elicited from an official source.

Presumably, the scientific bodies which were asked to report on the various processes for the fixation of nitrates have dealt exhaustively with the cyanamid, arc and Hauber processes. Mr. Baker says that the War Department has adopted a process "which is a modification of processes previously known." The War Department is to expend \$4,000,000 for the erection of several plants for the development of this modified process. The work of erecting these plants may take from six months to a year. To get any positive results—to produce nitrates for war purposes and for agriculture in any large quantities—may take another six months. The solution of the problem has been delayed by the long investigation into sites and processes, none of which now seem to be available. The processes which have been used in Canada and other countries are rejected in their original form, and while the engineers suggested 11 possible sites, any one of which might be available for a real nitrate plant, the whole question of sites has been shelved as an issue for the very distant future. No importance is to be attached to the report of the engineers, and it would seem from Secretary Baker's announcement that it is only now that a beginning is to be made.

Until these experiments are finished and until the country is able to determine how the "modified process" works out, the United States will still be dependent upon the nitrate deposits in Chile. There is no immediate prospect of a domestic supply for powder or fertilizers.

MOULTRIE PACKING CO.

\$300,000 Additions Will Increase Daily Capacity by 600 Hogs and 100 Cattle.

Details are being determined for the building construction, machinery, etc., required for the Moultrie (Ga.) Packing Co.'s \$300,000 additions announced last week, this enterprise having recently been purchased by Swift & Co. of Chicago. The C. L. Brooks Engineering Co. of Moultrie is the engineer in charge, and wires the MANUFACTURERS RECORD that the buildings will be of brick and concrete construction. These structures will be provided with machinery for a daily killing capacity of about 600 hogs (doubling the present plant), and will include coolers for this number. There will also be built and equipped an addition with a daily capacity for killing 100 head of cattle, the power plant will be remodeled and enlarged, the main building extended 100 feet, an 80x50-foot four-story addition provided for lard storage, etc. The pickling, lard, cutting, shipping and other departments will be increased, while the stock pens and accompanying facilities for handling livestock will be both increased and improved. The new department for cattle will be entirely separate from the hog killing, so that it can be conducted without reference to that department. The rapid growth of this Moultrie enterprise is readily indicated by figures showing results of operation during the first six months, when 2500 head of hogs were purchased from wagons. During the past six months 17,000 head of hogs were received by wagon. For the second year's operation the company handled 40,000 head of hogs. During the past year it has handled 80,000 hogs. Referring to the many advantages which have followed the establishment of this meat-killing and packing plant at Moultrie, a well-known manufacturer of that thriving little city states that Moultrie bankers say there is as much money in circulation in Colquitt county now as during the fall. In other words, the market for livestock is giving the farmers money to spend all the year

Using Illuminating Gas in Place of Gasoline.

Using Illuminating Gas in Place of Gasoline.

It is stated in special correspondence to the New York Sun that English motorists are using ordinary illuminating gas as a substitute for gasoline in running their automobiles. The gas is said to have been found more economical and just as efficient as gasoline, the only drawback being the finding of an efficient container for the gas.

The correspondence contains, in part, the following:

"There are a great number of commercial cars being operated by gas in various parts of England today. They are equipped with strong canvas bags with rubber insertion, which render them water and gas tight. The bags will hold 450 cubic feet of gas, and are roped or strapped to the top of the cars. By practical tests it has been found that 250 cubic feet of gas will run a motor as far as one gallon of gasoline.

"Conclusive proofs have been found that gas can be used to run any motor-car engine safely and without altering the car in any way. The fitting of a gas feed pipe affects the operation of the carburetor so little that, if desired, a motor can be run alternately on gasoline and coal gas without any changes in the mechanical parts.

"The only troublesome part of adapting coal gas to a motor is the inconvenience of carrying gas containers, which are at present heavy and bulky. Heavy containers, those used for compressed coal gas, are out of the question, as it would require gas cylinders weighing 1600 pounds to carry the equivalent of three gallons of gasoline. While the inventors are getting busy on methods of building containers, the motorists are using the canvas bag with the rubber lining. This may be recharged from any gas supply—a jet in any house is sufficient—and it carries enough to run 30 or 40 miles.

"When the success attained by users of coal gas in motors becomes widely known, it is probable manufacturers will be pressed for small gas bags for private cars. One concern, known widely for the automobile tires it produces, is already working on gas bags which can be adapted to small cars. A number of gas plants have placed taps outside their offices for the convenience of commercial cars, and the day is not far distant when private cars will be using the taps quite as frequently as the heavy trucks."

Why Texas Negroes Go North.

Houston, Tex., July 15.

Editor Manufacturers Record:

The report which has been scattered broadcast by a few irresponsible newspapers to the effect that the negro exodus from Texas is due solely to the fact that the negroes are not being treated right here in Texas is absolutely without foundation or truth. Those negroes who have gone North and are still going are going and have gone simply because they have been offered about twice as much for a day's work in the North as they are getting in Texas. This is the sum and substance of the whole matter, plainly stated.

In Texas the negroes are treated better than in almost any other Southern State. Here they have their own schools, and their school terms are as long as those of the white people, although the negro population does not pay into the educational fund one-fifth as much money as the white people. The worthy negro never gets into trouble, and always gets all the help he needs from white friends who are ready and willing to help him. So far none of the industrious country negroes have gone to the North. It is only the town negro out of a job or discontented with his work. In Texas thousands of negroes own their homes and are well fixed.

HENRY C. FULLER,

Editor Southwest.

Virginia's Contribution of \$20,000,000 Worth of Potatoes to Feed the Nation

[Special Correspondence Manufacturers Record.]

Norfolk, Va., July 16.

For 40 years or more the early potato crop in Virginia has been steadily increasing in magnitude and importance. This is especially true of the Norfolk section. Over on the Eastern Shore of Virginia, in the counties of Accomac and Northampton, potato-growing, as a crop for commercial purposes, is of more recent development, having been developed since the New York, Philadelphia & Norfolk Railway was constructed, which line runs practically the entire length of the two counties, about midway between the sea and the bay, offering first-class facilities to get the heavy farm product to the Northern and Eastern markets. Last year the Eastern Shore of Virginia crop reached mammoth proportions—something like 3,000,000 barrels. The output this year, not determined yet with any degree of accuracy, is expected to be somewhat less.

Daily shipments of potatoes from the Eastern Shore during past 10 days averaged about 400 cars, from the Norfolk section about 150 cars. Up to the present time the general average of prices in Northern markets has ranged from \$6 to \$10 the barrel for the first half of the season. Present prices, or the probable average price for the latter half of crop, will be found to be \$3.50 to \$4 the barrel. The crop of potatoes grown in the Norfolk section for the year ending August 31, 1915, reached a total of 1,279,253 barrels, and for the year ending August 31, 1916, 1,482,789 barrels. Saturday's shipments, July 14, put the Norfolk shipments this year well up to the million-barrel mark, with probability of 100,000 barrels more to go. The acreage in potatoes this year was at least 15 per cent. larger than ever before, but the planting season and all the early portion of the growing season was unusually unfavorable. There was much blight, much loss through poor seed, the high cost of seed, reaching as high as \$10 the barrel, bringing onto the market all sorts and grades of seed potatoes (Maine seed) and the yield was materially decreased else the Norfolk section would have produced a 2,000,000-barrel crop easily.

The Eastern Shore Virginia growers have an organization, the principal object of which is to sell f. o. b. at the stations on the line of rail penetrating that section, and their mammoth crop is well distributed to 40 to 60 cities and consuming or distributing centers throughout all the eastern half of the United States. That portion of their crop not sold f. o. b. is consigned to commission men in the different cities. The greater bulk of the Norfolk crop is consigned to commission men in all the larger cities.

The majority of growers in the Norfolk section are members of the Southern Produce Co. and the Truckers' Exchange, and these organizations attend to the shipping of the mammoth crops moving here every month in the year. Much of it has to be iced, and all of it has to be handled with the utmost dispatch on account of

its perishable nature. It may be safely stated that at all times, especially more so this year, the truckers have to meet the world, the flesh and his Satanic majesty, the devil, and the devil this year is the Kaiser and his crew. The war has in one way and another disarranged the freight service from the Norfolk section and seriously affected the transportation of farm produce. The number of steamers has been diminished a little, and the movement of Government freight increased greatly, causing a congestion, which has resulted in more or less loss of perishable freight—fruits and vegetables.

Then again, the Government and the railways and industrial plants, paying higher wages, and the steady drafting or drawing away of the colored laborers from the South to the East, North and West, have caused a shortage of labor on the farms. The truckers had been paying about \$1.25 per day, and suddenly found themselves confronted with the Government as a strong competitor, paying in excess of \$2 a day, and a shorter day at that.

It may be safely stated that if a potato rots in the ground in Virginia it is because of lack of labor or lack of transportation. The fool-killer would have a good field to work in if growers would let \$4 a barrel crop of potatoes rot in the ground. It requires a long range of fertile imagination to conceive of such a condition.

The "tater truckers are doing their bit," and doing it with odds against them in every way and shape, excepting in the matter of the general market price, which so far has been in their favor, although many thousands of barrels of \$8 and \$10 potatoes have been damaged in transit and sold for much less than cost of production.

We are surprised at the credulity of the New York Sun in a recent editorial and a man from Vermont accepting it as correct, who could for one moment imagine such a thing as a Virginia farmer allowing his potatoes to rot in the ground in order to boost prices while such prices as \$4 to \$6.50 were prevailing in all the great markets of the United States.

Referring to the "Boy Scouts" and the experience with them over on the Eastern Shore, it may be stated that the idea was conceived and acted upon both by the farmers and the scouts before either were in shape to successfully carry it out. The lack of labor on the part of the farmers prompted them to grasp at a straw, and the love of a "lark" on the part of youngsters just out of school prompted them to jump in at the prospect of a picnic.

A majority of the boys were tender-footed in every sense of the word; "spoiled boys," they might be termed, spoiled in bringing up or spoiled for business by being cuddled, coddled and fondled at home, and totally unfitted for any work on the farm. Many of the boys were less than 15 years of age, say, from 12 to 15.

They went for the novelty of it, and the novelty wore off before noon the first day. The boys were not to blame; they had to learn by experience. The growers were not to blame; they were grasping at anything that promised help in their extremity. It is a case parallel to that of the man who was kicked by a mule, "don't feel or look quite so well," but all parties "know more."

From all indications and figures available at present, the combined early potato crop of Eastern or Tidewater Virginia will reach a market value of between \$15,000,000 and \$20,000,000. If it should turn out to be less than \$15,000,000 it will be because of the larger quantity of small potatoes shipped which brought less price.

It can be safely and positively stated, without fear of successful contradiction, that the potato growers of Eastern Virginia are "on the job," and it is no part of their program to allow \$5 potatoes—the present average ruling price—to rot in the fields in order to boost the price.

No middle man or men would dare to handle the potatoes other than according to established rules, regulations and customs, and the relations between the producers here and the commission men are such as to enable our growers to at once shut out a man who would thus seek to benefit himself or anybody else by allowing a crop to rot in the fields or anywhere else under present world conditions. It may be well to state that on one or two occasions, through accidents to steamers heavily laden with Norfolk spuds, the goods were injured by delay to such an extent that a portion of the cargo was damaged and dumped overboard, in which case the transportation companies are held strictly responsible, and have to "come across with the wherewith" to make good.

In conclusion, it may be stated that the Vermont writer's fears and the imagination of the Sun need modifying by the injection of a little of the element termed "good sense."

Total Virginia Crop Estimated at 4,000,000 Barrels.

[Special Dispatch to Manufacturers Record.]

Norfolk, Va., July 17.

We passed the million-barrel mark yesterday. It is quite probable that we shall reach the 1,250,000-barrel mark. And as near as we can get at the crop of the Eastern Shore of Virginia, it may reach 3,750,000 barrels. The director of the Virginia Truck Experiment Station was in Accomac and Northampton counties yesterday in conference with leading potato growers. A consensus of opinion places the Virginia output at 4,000,000 barrels all told, and the average price at \$5.

A. JEFFERS.

Marketing the Early Produce of Tidewater Virginia.

By A. JEFFERS, Norfolk, Va.

Beginning early in the year, the South has been sending a steadily-increasing volume of food—fruits



POTATO PREPAREDNESS. HUNDREDS OF THESE MOTOR BOATS CLINGING TO THE WHARVES, ON WHICH ARE MILES OF WAGONS, ALL LOADED WITH SNAPS, CABBAGES AND POTATOES, THE LATTER CONSTITUTING 90 PER CENT. OF WEIGHT, BULK AND VALUE.



GASOLINE MOTOR BOAT IN THE FOREGROUND WITH FULLY 500 BARRELS OF POTATOES ON BOARD. THOUSANDS OF SUCH CRAFT ARE IN VIRGINIA WATERS HAULING TRUCK IN SEASON AND FISH AND OYSTERS IN WINTER.

and vegetables—to the eastern, western and northern portion of the United States. In this matter the State of Virginia has performed her full share.

In a single day as many as 275 carloads of potatoes have been marketed from the Norfolk section, and an equally large shipment from "Eastern Shore," Virginia—the two counties of Northampton and Accomac.

There is frequently a temporary congestion of these perishable products in and around Norfolk harbor.

Fully half of the vast volume of truck crops moving—such crops as potatoes, beans (snaps) and cabbages—as are moving at this season of the year are transported from the numerous truck farms which line the dozens of the "arms of the sea" all around the Lower Chesapeake and its tributaries by little motor boats. These are little sailing craft used for oystering in winter and for any other purposes for which such fine little boats are adapted. With the advent of the little gasoline motors, more than a thousand such little craft were fitted out with motors, most of them still retaining their sails, to be used in case of emergencies. A photograph herewith shows a portion—not more than one-tenth—of the fleet unloading at one time in Norfolk harbor.

At the same time, on the land side of the wharves a mile or more of loaded wagons are waiting to be unloaded. The wagons fall in one behind the other and wait their turn to be relieved of their loads. On much of the land from which these crops—cabbages, potatoes and snaps—are being marketed corn is being planted, and it is quite certain that with favorable weather conditions the corn crop of Tidewater Virginia will be the largest on record. Only one thing will hinder this outside of the weather, and that is the labor question.

Without attempting to discuss the political-economical side, phase or feature involved, the Government has instituted the eight-hour day in Government work, with increased pay; the industrial and transportation interests have been largely compelled to follow suit, both in hours of labor and pay, and all these influences have tended to draw labor away from the farms.

The question as to whether it is possible to run the farm on a basis of "eight-hour day with ten-hour pay and time and half time for all overtime" is yet to be determined, but it looks very much as if the highways would be lined with wreckage, for it seems to be an utter impossibility for the trucker to adjust himself and his work to such conditions.

The farmer's work is "from sun to sun," and then some, for his work, like that of woman's work, is "never done." Any man who from the soil makes his living must "make hay while the sun shines"; must handle his crops early and late; must not be hampered with too much red tape. Higher wages and shorter hours, or shorter days, have steadily lured the laborers from the farms until a majority of farmers in the South in general, and in the Norfolk section in particular, do not know "where they are at."

It requires labor, plenty of it, to move a million barrels of potatoes and a half million barrels of cabbages, and a half million more baskets of snaps, together with more or less quantity of a dozen or 15 other crops all at the same time. The Government, the railways and the many industrial plants of the country have been steadily drawing upon the agricultural bone and brawn

not only in the South, but thousands of laborers have been drawn away from the South to other portions of the country.

Notwithstanding all these, the truckers of Tidewater are surely "doing their bit" in supplying fruits and vegetables for the 100,000,000 people in the United States. But labor is short, the shortest ever experienced here before.

FORTUNES FROM POTATOES.

South Carolina Farmers Realize Profit of \$3,000,000 on Crop 9000 Acres Produced.

Charleston, S. C., July 9—[Special.]—A comparatively small number of planters in Charleston county have cleared a profit of more than \$3,000,000 from their Irish potato crop this season, this being the largest profit ever made from a single crop in any county in this State. The season's potato crop has sold for about \$4,000,000, and the cost of making it did not exceed \$1,000,000, it is estimated. The profit of \$3,000,000 is more than double the gross value of the 1913 potato crop, which brought \$1,200,000 and was considered a banner year. Local agricultural authorities predict that the total value for all crops for 1917 in Charleston county will be about \$10,000,000, or twice as much as the previous high record.

For the entire coastal section of the State, including Charleston, Beaufort and Colleton counties principally, the season's potato crop sold for a figure estimated at \$6,000,000. Fortunes were made by many. One Charleston county farmer made a net profit of \$40,000 on 100 acres of potatoes. For weeks automobile salesmen have been doing a thriving business in the trucking section of the county, and the Charleston banks have been benefited with deposits of several millions of new money received by the planters from Northern markets.

The Charleston county farmers produced some 500,000 barrels of potatoes, which brought an average price of \$8 to \$8.50 per barrel. The No. 1 "spuds" sold at about \$9 and the No. 2s at about \$7.50. The crop was grown on about 9000 acres, and the average profit was from \$300 to \$400 per acre, the average yield being about 55 barrels.

Not only have these farmers reaped a rich harvest from the potato crop, but their fertile land will soon produce a fall crop of potatoes, sweet or Irish, and corn, bringing in another stream of money.

The farmers of this county were especially favored by fortune, inasmuch as just as soon as everyone had shipped his crop the bottom seemed to drop out of the potato market and the price began to go downward rapidly. The market depression, however, was just too late to affect the local growers, who had already disposed of their product at the high prices which had been prevailing.

About 700 Boston street-car line employees, experienced in agricultural work, have volunteered to spend their two weeks' vacation on farms in that State.

AMAZING BENEFITS FROM CO-OPERATION.

Mississippi Farmers Growing Rich Through New Methods—Results Seen in State-Wide Development and Growth.

Jackson, Miss., July 9—[Special.]—Mississippi farmers have found a new use for an old word—co-operation. Marketing of the great amount of surplus farm products has been a problem that until the last five years had never approached a solution. Now all the farmer here has to do is to produce, and he'll receive ready money for what he raises.

Upwards of \$5,000,000 worth of hogs will be shipped to the large markets this year under the co-operative plan, which guarantees safe marketing at highest prices, with no overhead expense; cattle are moving by scores of cars under the same plan; the State has just completed the marketing of \$500,000 worth of Irish potatoes, almost a new crop, on a large scale; the first co-operative car of wool was shipped last week; a car of honey will move this week, and cars of chickens are being shipped from several points.

No attempt has been made to estimate the amount of money that will be brought into the State this year from co-operative shipments, but it will not run far below the value of an ordinary cotton crop, and the flow of money has been steady, instead of coming with a rush for a few weeks.

County farm demonstration agents are responsible for the co-operative plan. When they find farmers raising sufficient of any product to warrant its shipping in car lots they find a market, announce a date for a car shipment, receive the product, carefully grade it, and all the farmer has to do is to wait for his pro rata share of the check.

Never in the history of the State have prices been so good. Hogs are bringing from 12 to 15 cents steadily; wool brings 15 cents more a pound in the big markets than locally; chickens 10 cents a pound more, and potatoes averaged this year \$2.50 a bushel. Some sold in car lots as high as \$2.80 a bushel, an unprecedented price for this section.

The consequence has been a steady growth and development all over the State, with good roads, better schools and thriving small towns as a direct result of co-operation.

Publicity Committee of Cottonseed Association

President Wallace of the Interstate Cottonseed Crushers' Association announces the appointment of S. J. Cassels of Montgomery, Ala., as chairman of the publicity committee of the association, to succeed the late Jo W. Allison. The other members of the committee are R. L. Hedlin of Galveston, Tex., and Harry Hodgson of Athens, Ga. The publicity bureau will be under the direct management of Louis H. Geldert, assistant to the president and editor and manager of the association's official monthly bulletin, The Cotton Oil Press, at Memphis.



AN ELECTRIC MOTOR TRUCK WITH A THREE-QUARTER-TON LOAD OF POTATOES ABOUT TO MOTOR INTO THE HOLD OF AN OLD DOMINION STEAMER IN NORFOLK HARBOR.



CONGESTED TRANSPORTATION. FIVE ACRES OF SUCH CRAFT IN NORFOLK HARBOR AT ONCE. AS MUCH AS 300 CARLOADS OF POTATOES MOORED IN ONE DAY.

More Ships and Less Controversy Needed

[Special Correspondence Manufacturers Record.]

Washington, D. C., July 17.

Not until the contracts have actually been let and the work actually begun will there be any assurance satisfactory to the public that the great shipbuilding plan of the Government to meet the grave emergency brought about by submarine attacks is on the way toward final fulfillment.

While General Goethals has announced a program for building and commandeering that promises on its face the achievement of the objects in view, the past history of these promises has not been such as to warrant the conclusion that the matter has been finally settled.

There is still too fresh in the public mind the controversies of recent occurrence to permit conviction that any set of plans will proceed to its consummation without hindrance. It is also a very serious question in the minds of many whether the steel-ship proposition will meet the necessities of the present issue. According to General Goethals himself, it will take from 22 to 24 months from the time of starting to the time of the completion of his steel-ship plan.

These phases of the situation make of the positive announcement of General Goethals a matter that must be accepted as subject to qualifications and modifications. While President Wilson is known to be desirous of having all kinds of ships built in such numbers as may be possible, and while he is on record as saying that there will be no interference with the Emergency Fleet Corporation in its plans, Chairman Denman is also on record as having declared that all plans would have to be submitted to him for approval.

The situation is further complicated by the fact that, while chairman of the Shipping Board, Mr. Denman is also president of the Emergency Fleet Corporation, which fact must be held in mind in attempting to attach any definite and final value to the statements that issue from General Goethals regarding shipbuilding measures from time to time.

What the public wants is an end to the "backing and filling" that has characterized so much of the activities of the Shipping Board and the Emergency Fleet Corporation in recent months. Undoubtedly, the President has had in view the reconciling of apparently opposing elements involved, holding as he does that so far as the question of wooden ships and steel ships are concerned, both Goethals and Denman are right. Nevertheless, it is felt on the outside of official circles that no certainty of future action can be assured until President Wilson so clarifies the situation that a program once outlined can be put through. Programs without the authority to carry them through will build no ships.

These aspects of the situation force themselves in advance of a consideration of the very elaborate program for ship construction made public by General Goethals as general manager of the Emergency Fleet Corporation on July 13.

This program shows contracts for 348 wooden ships already let or agreed upon and 100 additional contracts under negotiation. Those already contracted for will provide a tonnage capacity of 1,218,000 tons, at a cost of approximately \$174,000,000.

Contracts for 77 steel ships have also been let, with a tonnage of 642,800 tons, at a cost of approximately \$101,660,000.

These are the figures in which the public is interested and finds comfort. They are worth more than a thousand programs. The difficulty in the past has been that Goethals and Denman get together, apparently come to an agreement, everything is full of promise—and then it all breaks down, because one or the other has changed his views.

What is also desired to know about these and the ships to be built later is whether they shall be fast or slow. This must be known in order that the proper types of engines may be in course of manufacture. It is obvious that fast boats are the desideratum for the present emergency purposes. Moreover, there are many empty ways waiting for the word from the Government to get busy. Motor manufacturing and gear cutting plants are likewise kept in suspense. While shipyards can start on the hulls with little notice, more time must

be given if electric propulsion is to be used. There are scores of other features that must be definitely determined in advance in manufacturing arrangements if any program is to be put through on record time.

While General Goethals' program announces that contracts will be offered for the building of two plants for the construction of fabricated steel ships, it should be remembered that there are plants already available where no work is being done. Any plan that neglects to employ their resources for putting the steel ships together while the Government plants are being built is just that much waste of time. It is understood that Philadelphia is the place of foremost consideration as a site for one of these plants.

News dispatches indicate that the United States Steel Corporation has patriotically concluded to bid for one of the contracts, irrespective of the fact that the terms call for a yielding to a 6 per cent. profit over actual costs. This report was accompanied by the statement that in the event of obtaining the contract that plant would be located on the north bank of the Chickasabogue, with the cradle dock in the Mobile River.

General Goethals' program of ship construction is as follows:

Hon. William Denman,
President United States Shipping Board,
Washington, D. C.:

Dear Sir—Now that the President has authorized the Emergency Fleet Corporation to exercise the powers granted by Congress to build and commandeer ships, I intend on Monday to start ship construction which will complete my shipbuilding program. My full program is as follows:

I.

Ships Now Building.

Contracts for 348 wood ships have been let, or agreed upon, with a tonnage capacity of 1,218,000 tons, at a cost, completed, of approximately \$174,000,000.

In addition, I have under negotiation contracts for about 100 wood ships.

Contracts for 77 steel ships have been let, or agreed upon, with a tonnage of 642,800, at a cost of approximately \$101,660,356.

There are thus provided 425 ships of all sorts, with an aggregate tonnage of 1,860,800, at a cost of approximately \$275,660,356, besides 100 more wood ships under negotiation. I shall continue to let all contracts for wood ships (of design approved by the naval architect of the Corporation) which I can secure from responsible bidders.

II.

Construction of Standardized Ships.

My main reliance for getting the greatest amount of the most serviceable tonnage in the shortest time will be on the construction of fabricated steel ships of standard pattern. For that purpose I shall use, to some extent, the existing yards.

On Monday I shall offer contracts for the building of two plants (to be owned by the Government) for the construction of fabricated steel ships, to produce 400 ships of an aggregate tonnage capacity of 2,500,000 tons within the next eighteen to twenty-four months. For the building of these two yards and the construction of ships in them I shall offer, as compensation to the agents who undertake the work, a fee of approximately 6 per cent. of the total cost of the work, with rewards for savings on cost and for speed in delivery. Provision will be made for decreasing the fee to prevent unnecessary cost. The contracts will give the Government the benefit of Government fixed commodity prices, and will provide for cessation of work at any time so that the appropriation may not be exceeded. Options will be given to the contractors to purchase the plants at arbitrated values on the completion of the work.

The design of the ship is ready, the plans of the yards are ready, the distribution of the work of furnishing the material and of fabrication is arranged.

This part of the program will take all the \$550,000,000 available not absorbed by contracts made or making, as stated at the beginning of this letter.

III.

Commandeering of Ships in Yards.

On Monday I shall deliver to shipbuilders a general statement of the program which I have long been maturing for commandeering ships now under construction for private account (such ships having an aggregate tonnage considerably in excess of 1,500,000 tons).

The essence of this program is to commandeer all such

ships and expedite their construction by adding labor and cutting out refinements. By thus federalizing each yard, giving it Government help and putting it on a speed basis, we shall produce its greatest efficiency. As fast as the berths are cleared each yard will be devoted to the production of a single type of tonnage for which it is best suited. I count upon the complete co-operation of the yards.

This program is made comprehensive because expedition cannot be obtained in a yard engaged partly on rush work and partly on prewar-time schedules. My investigation has satisfied me that citizens of the United States and of our allies will pay the cost of expediting ships now building for them and take them off our hands. If this policy is adopted, it will conserve our fund.

I agree that it is essential for the Shipping Board to requisition at once the neutral ships which are constructed and ready to sail. I have no data to make an estimate as to how many of these ships there are or how much money will be required for this purchase. I shall, therefore, cut my program to the extent of \$50,000,000. Please notify me at once whether this is enough.

Each day's delay in summer—in commandeering or contracting—means two days' loss of time in throwing the work into the winter months. It is for that reason I am urgent that the program start on Monday.

A statement issued by Denman last night indicates his views on the subject of shipbuilding control. That they are at variance with those held by General Goethals is readily apparent. In his statement Denman evidently speaks for the Shipping Board and the Emergency Ship Corporation as to the responsibility for all shipbuilding plans. The statement reads:

"We requested of General Goethals information concerning his program for the expenditure of the \$650,000,000 of public money of which the President's executive order has made the board and the corporation responsible. If the project has reached the condition of preparedness which it has been asserted it had reached, the information could have been furnished in two hours, or we could have been told if the information was not in hand."

"When we get the information in writing we will take up with General Goethals a discussion of all the matters involved in the project of building ships. What we want is speedy construction of ships, reasonable prices for steel in ship fabrication, and retention of all alien tonnage on our stocks, which may be necessary to carry troops and supplies to Europe if the rate of submarine sinkings continues at even two-thirds of that for the last five months."

"We also are interested in the retention by the Government of any fabricated plants constructed by the Government, and are interested in determining the policy as to their sale on facts as they exist after the war, and not now. We cannot now determine conditions of the world commercial warfare after the war, and we may require operation of these plants by the Government after the European war is over."

"General Goethals has not even told the public or the directors of the corporation the name of the two contractors who will undertake the fabricating contracts. For all we know, they may be mere subsidiaries of the steel producers."

"We are awaiting information from General Goethals on these and other matters referred to in the letter General Goethals gave to the public recently."

"The fact that we desire intelligent discussion of these matters is no reason why all persons responsible for them cannot come to an agreement."

The situation thus developed points plainly to a deadlock, unless General Goethals responds promptly to the request of Chairman Denman for the additional information. Should each maintain his present position, it may be necessary for the President to intervene again. In view of the immense importance of the whole proposition, public opinion is becoming more and more inclined to regard the present state of affairs as intolerable. There must be agreement, and that at an early date, so that the building of wooden and of steel ships can go forward at the utmost speed, as the emergency requires.

This Week's Southern Shipbuilding Activities.

Referring to his company's activities, Adrian Moore, secretary of the Tarver Shipbuilding Corporation, Beaumont, Tex., writes to the MANUFACTURERS RECORD that the corporation originally purchased the Beaumont Ship Yards and added materially to the equipment, including the installation of a complete line of modern woodworking machinery. The company is now building a three-masted schooner, and will probably have all the frames up in 30 days. Its purpose is to

lay keels for two additional vessels as soon as the site can be cleared, and with this end in view the management is inviting quotations on its requirements in order that materials may be assembled as promptly as possible. Details of this \$150,000 company's plans for constructing and repairing ships were recently announced.

Construction has begun on the plant of the Beaumont (Tex.) Shipbuilding & Drydock Co., organized in connection with the plans of John H. Kirby (of Kirby Lumber Co.) and associates to build ships for their own use as well as for other owners. Organization has been completed with J. W. Link of Houston as president and C. O. Yoakum of Beaumont as vice-president and general manager, the directors including Messrs. Ling and Yoakum, Walter J. Crawford of Beaumont, B. F. Bonner of Houston and S. A. Megarthy of New York. Plans for yards call for the construction of the following: 250x60-foot mill building and mold loft; 40x25-foot blacksmith and repair shop; 20x20-foot paint storage building; 40x30-foot oakum storage-house; 40x25-foot power-house; 100x50-foot warehouse for storing heavy machinery, sails and other similar ship materials.

The plant site is on Island Park, and the initial facilities are expected to provide employment for about 800 men, building ships of long-leaf yellow pine up to 4000 tons capacity. Four Government ships of the 3500-ton type will also be built, contracts having already been secured in accordance with recent announcements. Ten ships will be built for the Kirby Lumber Co., with which corporation and other lumber manufacturing interests the new shipbuilding enterprise is closely connected. Within a few months it is planned to add a drydock to the initial facilities.

It is reported that the Kelly-Atkinson Construction Co., Chicago, will build a plant for constructing wood and steel vessels at Pascagoula, Miss. The company has an option on a large river frontage.

Wooden nails for use in the construction of ships will be manufactured at Asheville, N. C., by J. W. L. Arthur & Son, who are planning a daily capacity of 10,000 locust tree nails, besides oak, hickory and maple nails. Cut-off saws, rip saws and turning machines are being installed, while other equipment will be added. This firm also expects to establish a similar plant at Burnsville, N. C.

Government officials are understood to be consulting with the Tampa Shipbuilding & Engineering Corporation, Tampa, Fla., for the construction of 10 steel ships, five of 5000 tons and five of 7500 tons capacity. This company's yards are on the Ybor estuary, and the site includes 40 acres of land with a frontage of 7700 feet on the turning-basin. It is reported that \$200,000 has already been invested for a power plant, machine shop, mold loft, joiner shop, machinery, etc. The keel for a 3500-ton steel vessel has been laid and much of the pattern work for a second ship has been completed. The plant is now employing about 500 men on one shift a day, and is expected soon to be running three shifts a day.

A. J. Knight and associates, Tampa, Fla., heretofore mentioned as to establish shipyards, are the organizers of the Tampa Dock Co., which was mentioned last week as preparing to begin the construction of a shipbuilding plant. This company is capitalized at \$1,000,000, and the officers have been elected as follows: A. J. Knight, president; Elsi Knight, treasurer; J. C. Vinson, secretary; J. M. McGucken, general manager; T. A. McGucken, superintendent of construction. The shipyard site is on Ybor channel. It will be equipped for constructing wooden ships, and probably later for building steel vessels. The company was lately noted as to build shipyards, including ways, for four 286-foot ships, having a 75-acre site with 2500-foot frontage on Ybor estuary. Its initial plant will include four ways, each 410 feet long and requiring 2700 piles; 50x50-foot machine shop of frame construction, 195x50-foot frame building with mold loft on second floor, wood-fabricating plant, 35x35-foot boiler-house of brick construction, 300-foot finishing dock, etc.

Rolf Seeborg of Mobile and New Orleans wires the MANUFACTURERS RECORD that he will give full information regarding his shipbuilding enterprise as soon as plans have been matured. He was recently mentioned as proposing to construct a shipbuilding plant and as representing Norwegian capitalists. Organization plans contemplate a company capitalized at \$12,000,000 to utilize a 500-acre site on Dog River, two miles from

Mobile, Ala. The improvements are to include the construction of a drydock to accommodate 10,000-ton vessels, a smaller drydock, beddings for building steel ships up to 10,000 tons burden, foundry, machine shop, etc., the products to include small gasoline engines and light water craft.

President B. N. Garrett of the Pan-American Trading Co., also president of the Houston Bank & Trust Co., Houston, Tex., advises the MANUFACTURERS RECORD of plans for the Pan-American shipyards recently announced. This is a \$10,000,000 corporation which will engage in a trading and transportation business with all the Americas, making Houston its headquarters. It has under construction a shipbuilding plant which will begin with six shipways and plans to construct 10 ships for transportation purposes along the Atlantic and Gulf coasts of North and South America. The shipyard site is nine miles south of Houston, where the company has purchased 5350 acres of land, including 10 miles of waterfront, five miles of which extends along the north shore of the Houston and Galveston ship channel. The management is pursuing a liberal policy toward inducing manufacturers and jobbers to locate on the ship channel and are offering free sites. It has succeeded in locating a factory for absorbent cotton, and it is understood that this plant has a large contract to furnish its product to our allies in the great war. Several other factories are negotiating for site on the company's land.

Ships and aircraft are to be constructed by the Old Dominion Shipbuilding & Aircraft Co., Richmond, Va., which has been chartered with \$1,000,000 capitalization and the following officers: Robert S. Hudgins, president; Charles S. Barrow, vice-president; C. L. Durbon, treasurer; James E. Cuthbert, secretary.

The Howard E. Crook Company, Baltimore, has increased capitalization from \$120,000 to \$250,000 and will establish a plant for the construction of wooden ships. It has arranged to utilize the marine department of the McLean Contracting Co. as a nucleus for the shipyards, and has contract to build six wooden hulls for the Government. A site has been purchased, including 900 feet of waterfront, and the initial plant is to be equipped in future for the construction of steel vessels. Marine ways and a machine shop will be built to begin with, to be followed later by the steel construction facilities. At present the Crook Company manufactures and installs boilers, piping systems and similar plants.

The Dantzer Shipbuilding & Dry Docks Co., Moss Point, Miss., has been incorporated with \$100,000 capital by A. F. Dantzer of Moss Point, L. N. Dantzer of Biloxi, Miss.; G. B. Dantzer of Gulfport, Miss., and J. L. Dantzer of New Orleans. This company will build the shipyards lately noted planned by the L. N. Dantzer Lumber Co. It will construct a plant to build 1250 to 1500-ton wooden vessels for its own use, and has already contracted for considerable shipyard equipment; also for an artesian well. The plant site is at Griffin's Point, on the east bank of the East Pascagoula River, 6½ miles north of the river mouth and one-half mile south of the confluence of the East Pascagoula and Escatawpa rivers, the land being an elevated plateau 15 feet above the river level.

Contract for building six wooden hulls for the Government has been secured by the Midland Bridge Co. of Kansas City, Mo., and it will establish its proposed Houston (Tex.) shipyards recently mentioned. Facilities will be provided for building the six hulls at one time, and the management expects to launch the first hull on February 1. One hull to be launched each month after that date. The plant site is on the Houston ship channel.

Avery & Roberts, St. Petersburg, Fla., are now equipped to build boats of any size up to 120 feet long. They have installed machinery with ways and the electric power drive. The firm is composed of A. P. Avery and George L. Roberts, the latter of Sarasota, Fla., and recently mentioned as to establish shipyards at St. Petersburg.

Shipbuilding at Orange, Tex.

With the recent establishment of several new shipyards at Orange, Tex., there are now in active operation five shipbuilding plants. These are the International Shipbuilding Co., Orange Maritime Co., Southern Drydock & Shipbuilding Co., Sabine-Neches Shipbuilding & Navigation Co. and the National Shipbuilding Co. With the exception of the International Shipbuild-

ing Co., all of the others are backed by Orange capital.

These shipyards have at present contracts for 54 vessels, including those of both Government and private ownership. Fifteen of these vessels are now under construction.

One striking feature of the plants being established is the fact that all buildings and structures are of a permanent character, evidencing that those going into this business are not doing so on an emergency basis, but with the firm belief that the industry is to be a thoroughly established one. All of these plants are located on what is termed "The Island," formed by a bend in the river and directly facing Orange. A natural depth of 26 feet of water is available to the Gulf.

In addition to the land occupied by the present plants, there is still available 12 miles of waterfront which is equally well suited for other shipbuilding plants.

In discussing with a representative of the MANUFACTURERS RECORD the shipbuilding activities of Orange, President F. W. Hustmyre of the Orange Board of Trade especially pointed out that while the new shipyards have been the means of the unusually rapid development in all branches of business in the city, they do not consider it in any sense of boom character, but firmly believe that it is based upon solid, substantial lines, and are expressing their faith in this belief by the investment of their own capital in four of the five new shipyards and are building them on a permanent basis.

Shipbuilding on Mississippi Coast.

Jackson, Miss., July 14—[Special.]—Settling the disagreement between chiefs of the United States' shipbuilding program has given new impetus to the shipbuilding industry on the Mississippi coast. In spite of these disagreements, work has continued on the large shipyards, as the demand for bottoms is so great, regardless of the Government's contracts, that every yard can find all the work it has facilities for.

Greater demand for seafoods has caused an increase in the fishing and shrimping industry on the coast, and many schooners have been built recently. Twenty thousand dollars has been spent at Biloxi by the shrimp and oyster trade this spring. The Biloxi Shipyard and Box Factory now has contracts for eight big schooners, valued at \$1800 to \$2300. The Fountain Shipyard will build four of these.

The Biloxi Shipyard Co. also has contracts for two 3500-ton wooden steamers for the United States Emergency Fleet Corporation. Each will cost \$300,000 and will be completed in six to eight months.

Work is being pushed rapidly on the Henry Piaggio plant at Pascagoula, and that of the L. N. Dantzer Lumber Co. at Moss Point. The Dantzer interests will build lumber schooners for their own use, three at a time, from 1250 to 1500 in tonnage. The first three keels will be laid in August.

The Emergency Fleet Corporation will also erect a plant at Pascagoula for the building of eighteen 3500-ton wooden steamers. The site has been purchased.

Employment will be given to thousands of men in these shipyards, which will all be in use by fall. On account of the proximity of the great pine and hardwood tracts in Southern Mississippi, no trouble has been experienced in getting materials, despite the car shortage.

Henry Piaggio's Pascagoula Shipyards.

During the present week Henry Piaggio of Gulfport, Miss., expects to lay at least five keels at Pascagoula, Miss. The ground has already been leveled, and piling is being driven for the majority of the foundations. Mr. Piaggio advises the MANUFACTURERS RECORD that the five ships to be built will each be 311 feet long by 46-foot beam and 21-foot 8-inch hold, each having a carrying capacity of about 2,000,000 feet of lumber. About 1,000,000 feet of lumber will be required in the construction of each vessel, and each ship will cost from \$200,000 to \$225,000. While only five keels are being laid at present, it is possible that this number will be increased to 10 and 15 in the future, but he cannot now make a definite statement as to this. Mr. Piaggio was recently mentioned as having purchased 20 acres of land on the east bank of the East Pascagoula River as site for a plant at Pascagoula.

Remarkable Expansion of Industrial Capacity at Louisville

[Special Correspondence Manufacturers Record.]

Louisville, Ky., July 14.

One of the significant "signs of the times" south of the Ohio River and east of the Mississippi River is the activity among the manufacturing concerns of Louisville, Ky., in the way of extension of their facilities, considerably over \$6,000,000 being represented in expenditures of this sort. Louisville has its million-dollar Industrial Foundation fund, which is to be devoted to bringing new manufacturing establishments to the city, but this is separate from the additions which are being made by large numbers of the already established concerns to their going plants. In practically every case the extensions and betterments indicate that the owners of the plants are making ready for an increase of business and show the confidence felt by the business interests of that city in the immediate future of Southern trade.

Of general interest and significance in this connection are the projects which the Louisville Gas & Electric Co. and the Louisville Water Co., the latter owned by the municipality, are at this time carrying out. Both of them are making elaborate preparations and presently will have a producing capacity greatly in excess of immediate requirements of the city and section, which will provide power and water for almost any probable industrial developments in the Louisville area for some years to come.

The Louisville Gas & Electric Co., formed four years ago by consolidation of the public utilities supplying gas and electricity in Louisville, has completed consolidation of the generating stations by establishing its waterside plant at 2d street and the river. The city and a large surrounding area are now supplied with electricity from this plant, and at this time improvements under way will provide for a total capacity of 20,000 kilowatts. Included in the improvements is a new intake tunnel to the bed of the Ohio River to supply the condensing water. Total cost of these improvements, which include establishment of new substations through the territory served, will amount to \$1,500,000.

Capacity of the Louisville Water Co. will be increased by 30,000,000 gallons daily and brought up to 75,000,000 gallons by the improvements which are well under way, the total cost of which will amount close to \$1,000,000. They include construction of an additional pumping station, in which will be installed two 30,000,000-gallon pumps. The caisson to be used in construction of the intake has been completed and is now being sunk, and improvements of all kinds are to be completed by the middle of June, 1918. Already, in anticipation of the increased capacity of the pumping station, a new 48-inch main has been constructed at a cost of \$180,000 from the pumping station to the filter plant in Crescent Hill. Cost of the new pumping station will be about \$800,000.

In the way of new construction the principal item is the refinery which the Standard Oil Co. of Kentucky is building just outside of the city, near the State Fair grounds. It will handle Kentucky oils, of which the production is rapidly and steadily increasing, and will refine oils and gasoline for the Kentucky trade. The site on which the plant is being erected covers about 400 acres, and the refinery, which is due to be completed by October, 1918, will employ up to 400 men. Cost of the plant will range up to \$1,500,000, and the capacity of the initial units will be between 250,000 and 300,000 barrels a year.

The Vogt Bros. Manufacturing Co., Adam Vogt, president, is completing an extensive steel plant, including foundry, machine shops, plate, etc. Total cost of this enterprise will be about \$350,000. The company recently amended its charter, increasing its capital from \$50,000 to \$250,000, in view of the approaching completion of the project and beginning of operations. Installation of equipment in the foundry has been completed to the extent that the company is now prepared to handle castings up to 25,000 pounds. Included in the machinery equipment is a 10-foot boring mill. This plant is of modern construction throughout, and is operated electrically.

Recently completed and prepared to receive this year's grain is a new elevator erected of concrete and steel

by the W. A. Thomson Company at a cost of \$100,000. It has a capacity of 300,000 bushels, with 28 concrete bins, and electrically operated throughout. The owners have under consideration an addition to the plant which will double the capacity. Plans for reconstruction of the plant of the Kentucky Public Elevator Co., destroyed by fire last winter, have been held up for some time awaiting adjustment of the fire losses, but announcement of plans is expected in the near future.

Most of the construction activities in Louisville are in the way of extensions of existing plants. The Kentucky Wagon Manufacturing Co. in South Louisville is a noteworthy instance. Latest in the way of an addition to this plant, which has been extended several times in the past two years, is a forge shop, being constructed at a cost of about \$50,000. This will house 17 new steam hammers of all capacities, and also a portion of the equipment from other departments of the factory, so that the forging and blacksmithing work can be grouped. Since R. V. Board became president of the company the lines manufactured have been extended, and the new automobile body department of the company is doing an extended business. Contracts for Government army work recently secured by the Kentucky Wagon Co. aggregate between \$2,000,000 and \$3,000,000.

The C. C. Mengel & Bro. Company, lumber manufacturer, has just completed and put in operation installation of new equipment in the sawmill and dimension stock departments. The additions in the sawmill included a new band saw which increases the capacity of the plant by about 75 per cent., while new saws installed in the dimension mill have also proportionately increased the capacity there. In addition, there have been additional storage requirements taken care of.

The Mengel Box Co. is adding extensively to the paper-box department of its factory, which will largely increase the capacity of this department in the manufacture of boxes of certain large sizes. The improvements include construction of a fourth floor over a part of the plant and installation of special machinery.

The Louisville Cooperage Co. is occupying a new plant, constructed some months ago following a recent fire. Incidentally, it may be remarked that all of the cooperage plants of the section are working on a rush basis to keep up with the "last-gasp" demand of the distillers, who, expecting a long if not permanent period of idleness, are engaged in making all the whiskey they can before the expected Federal legislation stops operations altogether.

Lumber manufacturing and other woodworking plants in Louisville are included in plants which are extending or otherwise improving. The Churchill-Milton Lumber Co. of Louisville is establishing a double band-saw mill at Greenwood, Miss., and increasing the capacity of its mill at Glendora, Miss. The Wilson Furniture Co. of Louisville has recently displaced a steam plant with 125-horse-power electric motors. The Turner, Day & Woolworth Handle Co. has added a 50-horse-power motor to its power equipment and a circular saw, and has begun manufacture in new departments of shuttle-blocks of maple and dogwood and persimmon golf club heads in the rough. The Hillerich & Bradsby Company has doubled the capacity of its department which makes golf clubs, which it is turning out on a big scale, using on some of them a new cork grip which is proving popular. The Hilton-Collins Company proposes changing its singletree manufacturing plant from steam to electric drive, and officials of the company have organized a company which will cut hickory for use of the Louisville plant in certain sections of Western Kentucky. New equipment has been added to the Louisville Veneer Mills, while the Southern Veneer Mills have replaced a drier damaged in a recent fire. The Inman Veneer & Panel Co. is a new concern which is completing a plant in Louisville.

In the way of textile factories it may be noted that the Louisville Cotton Mills has begun changing its plant over from isolated power plant drive to central station service, the total amount of horse-power involved being about 1500. Wiring plans provide for installation of transmission connections sufficient to

serve the entire mill. The Louisville Woolen Mills are changing over to central station service and installing motors ranging from 5 to 40 horse-power, with probabilities of a total connected load of 300 horse-power. The McCord Company of Louisville, whose plant at Grahampton, Ky., was destroyed some time ago by fire, has rebuilt and is equipping with machinery from the Louis Kentucky Cotton Yarn Co. plant at Louisville. It was decided to rebuild the plant at Grahampton because of the fact that there are plenty of trained operatives available in the section.

Food products manufactories which are making or have just completed betterments include Brades & Gheens, manufacturers of candy in Louisville. This company, which has been long in existence, has just completed changing over from steam to electric drive, using central station service. The refrigerating plant of the concern has also been increased from 10 to 20 tons by installation of refrigerating machinery which raises the daily capacity from 10 to 20 tons. The Louisville Baking Co. has added new patented ovens and other improvements to its plant. C. F. Vissman & Co., pork packers, have added cooling accommodations with a capacity for 125 head of cattle a week. The Louisville Provision Co. by the latter part of August will have completed extended additions to its pork-packing plant and beef abattoir, which will increase the capacity of the concern by 200 per cent. and will enable it to handle 600 hogs and 150 head of cattle daily. Cost of these improvements will reach about \$80,000, and the plant will take rank with the best in the section.

The Louisville Varnish Co. is at this time adding a canning plant and storage-house to its plant, with the expectation later on of increasing all the facilities of the factory to the scale provided for in these departments. It is contemplated that two new varnish fires will be added later, and other departments of the manufacturing end increased at the same time. Cost of the addition under way at this time is about \$50,000. The Louisville Soap Co. has just completed a glycerine refining plant addition to its factory. The Butter Cup Oil & Tank Co., handling cottonseed oil, recently increased its capital and is engaged in a more extended business. Another establishment under the head of oils is the Benzola Garment Cleaning Co., which is establishing a new dry-cleaning plant to be electrically operated at a cost of \$15,000.

The Charles Stoecker Tanning Co. has recently been organized to take over and largely improve an existing tanning plant, having contracted for central station electric service and having purchased 20 motors of various sizes. The American Oak Leather Co. is making improvements reported to cost \$12,000, and the Globe Tanning Co. is another plant that is in line with the preparations for the increased business looked for in the near future.

Industrial Development at Bogalusa.

Bogalusa, La., July 7.—[Special.]—The new paper mill now in course of construction, and which will cost \$2,000,000, will have a capacity of 150 tons of container liner per day. Container liner is a tough cardboard that is used in making boxes and packing cases. The same company expects to build another paper mill in 1919, or as soon as the machinery and equipment can be secured. The third mill will have a capacity of 250 tons of container liner daily.

Perhaps one of the greatest sources of natural wealth in this section is the hardwood timber stumpage along the Bogue Chitto and Pearl rivers. The Great Southern Lumber Co. recently had a survey made of this timber, and found that within a short distance of Bogalusa there is about 800,000,000 feet of virgin hardwoods, principally red gum, but interspersed with considerable quantities of white and black oak, ash, etc.

With the view to developing this timber, the Pioneer Box Co. of Crawfordville, Ind., has formed a Louisiana corporation under the name of the Bogalusa Veneer & Box Co. to establish a plant here. The factory, which will have a capacity of 20,000 board feet per day, is now in course of construction.

In addition to these new industries, the Ozone Ice Co. has just completed a modern creamery plant at Bogalusa at a cost of between \$15,000 and \$20,000. The creamery will be operated in conjunction with the ice factory.

To Seek an Advantage in War Through Study of Weather Conditions

[Special Correspondence Manufacturers Record.]

Washington, D. C., July 14.

An important part played by the weather in the conduct of the war, evidenced by repeated references in history, becomes today a matter of more than academic consideration. If there ever was a time in the course of the world's affairs when the subject might be held of paramount interest, it would seem to be at the present moment, when every element bearing on the question of defeat or victory is engaging the attention of men.

Time and again Washington and his tattered continental took advantage of the worst the weather could do in turning the tide against the more luxuriously inclined commanders of the enemy. Thus it was with the crossing of the Delaware, when preparations by the Hessian army for an enjoyable holiday celebration within the camp were accentuated by stormy conditions without.

Impassable roads, swollen streams, storms both on land and sea, have all played their part in determining the issue of arms. Who does not remember the familiar opening lines in the description of the battle of Waterloo in the old school readers? "If it had not rained on the night of the 15th of June, 1815," the night preceding the battle, "the future of Europe would have been changed." It is explained that Napoleon, being unable to maneuver his artillery, on which he so much depended, on account of the muddy ground, could not give battle until midday, allowing time for Blucher to come up before the battle could be won. Still earlier the weather, fought against the great Corsican, the records of Europe showing that not for a generation had such severe weather been experienced as that which he encountered in his Russian campaign.

Of even greater determining value may be the absence of the accustomed amount of rainfall or the presence of abnormal heat during the growing season throughout the countries at war. Cabled reports were insistent in the latter part of June regarding the prevalence of unusual heat waves in Germany, cutting down materially the prospects of a favorable harvest. With a strict embargo enforced on neutral countries adjacent to the Central Empire, this condition may be made to apply to the hope of success of German arms with telling force.

Inquiry at the Washington headquarters of the Government Weather Bureau by the MANUFACTURERS RECORD correspondent failed to elicit any definite information in confirmation of these reports. It was explained here that no meteorological reports had been received from central Europe for many months, while the weather charts from the British Government had likewise been many weeks late in arriving.

Generally speaking, however, the opinion was expressed by the meteorological experts that the effects of the weather on the course of battle had by no means lost the decisiveness possessed in the days when the issue was settled by more primitive methods than today.

Just how far the Weather Bureau by its knowledge and organization can aid, so that advantage may be taken of the weather or its disadvantages be avoided, is difficult to say. As with other scientific branches of the Government, this bureau is just now engaged with plans to co-ordinate its work with that of the active war organizations, so as to be ready when its services shall be required. That it will render valuable service is to be expected, but, like so many other of the new-found agencies, its utilization will likely be a development of the war, progressing stage by stage.

At the moment it would appear that the most important aid the bureau will be called upon to render will be that to the aeronautical service. Its chief, Prof. Charles F. Marvin, is a member of a number of the advisory committees which are studying the scientific aspects of military and naval operations with the object of bringing to bear in the conduct of war every helpful agency known to American savants. In the field of aviation the way seems especially open. Congress has already made provision for the establishment of a

weather observing station at each of the aviation fields. As fast as these stations are equipped the work of making upper-air observations by means of kites, balloons and airplanes will be begun and the results studied in their relation to the needs of the aviation service.

Later, if the situation demands, the Weather Bureau will be prepared to utilize the principles now employed in the making of weekly forecasts for the United States to the making of similar forecasts for the war zones.

Those who have followed closely the progress of military events will recall the numerous occasions when bulletins have recorded the fact that owing to adverse weather conditions successful air reconnaissance was difficult or impossible. Such conditions are very largely associated with a certain type of atmospheric distribution over the North Atlantic Ocean. The forecasters of the Weather Bureau are familiar with this and other controlling North Atlantic weather types, and are prepared to point out the resultant effects on European weather for the information of the military staffs. Another interesting statement that has appeared is that on account of the fact that the prevailing winds over the region of war in France are from the west, the allies have a distinct advantage in the matter of gas attacks, as the clouds of gas are by this means borne into the enemies' trenches. Forecasts indicating when these conditions could be depended upon would manifestly be of great value.

In the field of war economics, as well as in that of actual military operations, the Weather Bureau will find opportunities for helpful work. Studies conducted by the bureau have resulted in developing very close correlations between weather conditions during the period of crop growth and the subsequent crop yields. By following from day to day the course of weather events, it is able to say with a great degree of accuracy what the crop prospects are. Thus the meteorological data collected by the bureau daily form an invaluable adjunct to the periodic reports on crop conditions and food stocks as issued by other branches of the Government service.

A co-ordination of its long-range weather forecasts and crop relation studies will also make possible a fairly accurate statement by the Weather Bureau as to the crop outlook in the United States for a week or more in advance; that is, whether growing crops will likely improve or suffer deterioration under the expected weather. Arrangements have just been completed for large extensions of these weekly forecasts, issued each Saturday, whereby they will be telegraphed during the growing season to upward of 200 telephone exchanges throughout the principal agricultural States, so that the forecast may be promptly available for the use of persons engaged in farm operations. This distribution is in addition to that heretofore made.

The weather at certain seasons of the year has an important bearing on the transportation of perishable food products, such as potatoes, fruits and eggs. One of the most difficult situations the German authorities have had to deal with is said to have occurred last winter, when an unusual cold period prevented the shipment of potatoes to Berlin. It is not beyond the bounds of possibilities that here in the United States a similar situation may arise. For some years past the Weather Bureau has issued locally what is known as a shippers' forecast, designed to be utilized in the prevention of losses in food products in transit. It is prepared, of course, to elaborate this service to meet war conditions.

A somewhat general idea that battles and bombardments are productive of rainfall is one to which the Weather Bureau gives no countenance. Several times early in the past month, when severe storms were prevalent in this country, the opinion was expressed by the public that the continued cannonading in Europe might have been responsible for their occurrence. But, as the Weather Bureau points out, no such storms were experienced in the area of fighting. It was also recalled that an "Easter storm" of considerable intensity interfered to some extent with the great allied "drive" at that time, but as the storm was coincident with the general attack, the latter could not well be considered its cause. Moreover, a series of experiments conducted

in this country some years ago with explosives during a dry period failed to bring the anticipated results.

As regards the entire sequence of weather conditions, the bureau places small faith in any hope of its control by human agencies. If they are to take advantage of such uncontrollable events, it can only be through fairly accurate foreknowledge of their occurrence.

GROWING DEMAND FOR SOY BEANS.

Large Increase in Acreage of Crop—Packers, Individuals and Government Officials Show Increasing Interest in Product.

Raleigh, N. C., July 14.—[Special.]—The MANUFACTURERS RECORD is recognized here as having been a prime factor in making known to the people of the United States the great value of the soy bean, and it is pleasing to North Carolinians to know that their State has been and is the leader in the development of what is coming to be a vitally important crop. Official reports to Raleigh show that at least 111,000 bushels of soy beans were shipped from Eastern North Carolina during the autumn, spring and winter to canners, and there is at least 25 per cent. increase this season in the acreage devoted to this crop. In many counties the increase is 50 per cent., and even more.

In a talk with Mr. C. B. Williams, the chief of the Agronomy Division of the North Carolina Experimental Station here, which is conducted jointly by the State Department of Agriculture and the College of Agriculture and Engineering, Mr. Williams said: "I have just returned from Washington, D. C., where I arranged with the office of forage crop investigation to carry on extensive soy bean investigations in North Carolina, in co-operation with the division of agronomy, these investigations to be conducted in both the eastern and western sections of the State. While in Washington I had a conference at the Bureau of Chemistry with Miss Wessling, who is devoting much of her time to the study of the value of soy bean meal for making various kinds of bread, and also soy bean oil for various kinds of salad dressings. She had been in the South some time, and made many demonstrations of bread-making from soy bean meal, and is certainly enthusiastic in regard to the value of this meal for human consumption. I also specially visited the office of Home Economics of the United States Relation Service and talked with Dr. A. D. Holmes, who is conducting extensive and thorough experiments to determine the digestibility of the products of soy beans. He, too, is enthusiastic regarding the possibilities of this crop for supplying human food of a rich and nutritious character."

Mr. Williams was asked what investigations he had made as to soy beans put up in cans, and said he had tried some canned in Baltimore and had found the products to be of a fairly good grade, but that the best products of soy bean his division had been able to secure came from a packing company at Vincennes, Ind. This company steadily runs full-page advertisements in leading Chicago papers advertising its pork and beans mixtures. The beans being used are soy beans, it having bought several carloads of these in Eastern North Carolina.

Mr. Williams showed a letter from a Baltimore manufacturer as follows: "We have packed a good many soy beans, and they have apparently given good satisfaction. As they are of a different variety from those generally used, we expected to receive some criticism, but had fewer than we anticipated. On the other hand, we have received a number of repeat orders. We consider these beans a very good article, and it seems to us that the demand for them should increase."

It may be stated that during the past three months the Agronomy Division here has received inquiries from every State in the Union regarding the value of soy beans in various products, and it can hardly keep in print enough bulletins on this subject to meet the demand.

More than twice as many mills will crush soy beans of this season's growth as engaged in this line last season. The crop looks well, and a great yield seems certain. Never before has what may be termed a new crop received so much attention, and the beans are found growing to the very ocean shore. New uses for them for foods and other purposes are being daily found, and prices are high and well sustained. It is significant that no growers abandon their cultivation, this being a sure proof of the value of the crop.

Hoover, the Worker of Miracles in Feeding Millions

SOME INSIDE FACTS ABOUT HIS WORK IN BELGIUM AND FRANCE ANSWER A SENATOR'S QUESTION "WHO IS THIS MAN HOOVER."

[Special Correspondence Manufacturers Record.]

Washington, D. C., July 14.

In the debates of Congress on war measures there crops up continually an expressed fear of what might happen if unusual powers are invested in any of the executive authorities.

This attitude has served to hamper the progress of necessary legislation in many respects. Not least have been the obstacles encountered in perfecting the provisions of the Food Control bill. So concerned have been the lawmakers over the possible abuse of powers that they have introduced a clause prohibiting any man engaged in a business whose products will be used in the war from being a member of any of the committees of the Council of National Defense.

But the burden of opposition has been against Herbert C. Hoover, chosen by the President for the position of food administrator, once the food bill becomes a law. To some of the legislators Hoover has become a veritable bogey. All they can see in him is a "dictator," one who will wield power in an arbitrary manner, without regard for the rights of the people.

Some years ago a popular story appeared about a mighty potentate, called the "Wizard of Oz," of whom his subjects stood in great fear, although he had never been seen by any of them. When eventually brought to light by accident he turned out to be a mild-mannered chap, who, despite his powerful voice, was one of the kindest-hearted fellows imaginable.

There is about as much likeness between the Hoover of perfervid senatorial imagination and the real Hoover as there was between the imaginary wizard and the gentle old fellow he turned out to be.

Perhaps some fair idea of what Hoover is going to do with the American people may be gathered from what he has done for other people in the past. It is also possible that a few words regarding his personality will serve to banish the fearful visions that have been conjured up.

Herbert Clark Hoover was born in Iowa in 1874. This makes him at the present time 43 years of age. He doesn't look it. He is youthful in appearance, boyish-faced, with a fresh complexion, always in excellent physical condition, of quiet manner and 5 feet 10 inches in height.

Hoover went to California at a comparatively youthful age. He worked his way through Stanford University, taking the degree of B.A. in mining engineering in 1895. At this coeducational institution he met Miss Lou Henry of Monterey, whom he married in 1899.

From the outset of his career young Hoover presented a successful admixture of extreme idealism, combined with keen practicality. One of his first assignments in his profession was given him by Judge Curtis Lindley, the best-known mining lawyer of the Pacific Coast. It was the work done by Hoover in giving expert judgment on a large mine in litigation that started him on the road to success, fame and riches. He soon became known as one who could look into "properties" and assay their potentialities with wonderful exactitude. Repeated tests of his ability in this respect confirmed the dependence of mining interests in his judgment.

With this flattering start in his profession, the subsequent experiences of the young mining engineer became a bewildering series of adventures. At the age of 25 he was the Chief Engineer of the Chinese Imperial Bureau of Mines. In this position there was call for the highest qualities of generalship and diplomacy. In protecting the interests of the Chinese Government against foreign exploitations he was brought into contact and often into conflict with the brightest financial minds of the world. It was a constant struggle lest they "eat him up" in the field of mineral development in the great but poorly-organized empire. Hoover saw actual warfare as well, having taken part in the defense of Tientsin in the Boxer rebellion, when he was arraigned against the disturbing elements in China, though not against the Chinese Government itself.

Having demonstrated his powers of organization,

his natural gift of "sizing up" mining values naturally brought him into relationship with large financial organizations. In London he soon became a director in many companies. In a short time he was very wealthy, a "pounds millionaire," as they say in the British metropolis.

But, while he succeeded everywhere, something of the irony of fate is found in the opposition he at times experienced. He and his brother developed exceedingly valuable lead mines in Australia. On account of trade rivalries, their efforts to sell their lead in England were blocked. Nevertheless, practically 25 per cent. of their output went to Europe, the greater part to smelters in Germany. The result is that thousands of Australians charging over the tops of the trenches on the Western Front have had to face a hail of lead that once rested peacefully underneath their native soil, and which was mined by the man who has been most effective in bringing relief to the suffering populations of the lands invaded by the enemy.

Hoover broke into the relief game when Americans from all parts of Europe began to make a beeline for London after the outbreak of the war. He had already acquired an international reputation as a man who could do things. Consequently, when an informal association was formed by Americans for relief purposes, Hoover was made chairman.

Voluntary contributions began to be received. The first official American fund was sent over on the cruiser Tennessee to Ambassador Page, who worked in harmony with the American Relief Association in London, with Hoover at its head. In a short time the situation was cleared up.

Then came heart-rending accounts of the condition in Belgium. Already the American Relief Association had extended its aid beyond Americans. Many Belgian refugees in London were then being cared for by the association.

Why not make it more general? By the processes of evolution Hoover was about to become the general almoner. It was a ticklish undertaking. It involved negotiations both with Germany and with England by a neutral commission.

Hoover went to Lloyd George. A meeting was arranged, with a few leaders in the movement present, the Premier presiding. Lloyd George said, in substance: "I am opposed to the whole proposition. If we help to relieve Belgium, we relieve Germany. If we send food to the Belgians, the Germans will take the Belgians' food for themselves. We should not assume the duty of feeding the Belgians; that is the duty of the conqueror. In any event, we cannot depend upon the Germans—we can't believe them, whatever co-operation they may promise. Besides, any such efforts will impede the operations of the war."

Hoover met the arguments as follows, again in substance:

"Great Britain is fighting to defend Belgium against the gross violation of its neutrality. It is the essence of the argument of Great Britain that she is in this war in defense of small peoples."

Hoover then brought proofs of the German war plan as made public in Germany to show that her policy was not to feed the overrun people, whatever her duty might be. He cited the further argument of Germany, to the effect that the British blockade was starving the people of Germany. If that were raised, the German argument continued, Germany would feed the starving people elsewhere. In other words, the German idea was that England was to blame, and that it was up to England to feed Belgium. In actual experience, Hoover declared that the Germans had been acting in good faith; that they did not take the food sent to the Belgians. All he wanted was an "open sesame" into Belgium, and he'd see to the results.

At the end of the conference Lloyd George said: "I am convinced; go ahead, gentlemen. Excuse me now, please, I have another engagement."

From that moment Belgium has been fed. The amount expended in Belgium, largely by England and

France, has amounted to more than \$300,000,000. America has received much credit for the part she has played in the relief effected. As a matter of fact, the amount contributed by this country has been but a drop in the bucket.

Even more interesting were the activities of this unique personality in France. The success of the relief work in Belgium had been so marked and the gratitude of the suffering and oppressed so touching that the minds of the relief heads were turned to the invaded portions of Northern France, where conditions were fully as distressing.

Mr. Hoover went to Paris and laid his plans before the Government. The same old battle was fought out on the same old lines. France could do nothing, as it would amount to a virtual recognition of the rights of the enemy to invade her territory without providing for the wants of the civilian population. It would, indeed, be putting the seal of approval on the Hun methods of warfare.

But Hoover insisted on talking of hungry Frenchmen and Frenchwomen, their brothers and sisters, until finally he was told that if he would be at his hotel at 2 o'clock that afternoon, he might expect a visit from a prominent French banker.

Mr. Hoover made it a point to be there. Two o'clock came; also the banker, who asked many questions.

"How much will it take?" asked the financier.

"It will take \$2,500,000 to organize and \$5,000,000 a month thereafter."

"You will hear from me," said the banker, and after some further casual conversation he took his departure.

Mr. Hoover left Paris for London the next day. On the morning after his arrival, in opening his mail he found a letter with a Paris postmark. Within was a check for the equivalent of \$7,500,000, enough to organize the relief work in Northern France and carry it on for the first month. On the first of every month thereafter Mr. Hoover received a check for \$5,000,000.

"After the work was well underway," said Mr. Hoover, "I went to Paris to give an account of my stewardship. They were glad to see me, but refused to take any cognizance of the object of my visit. Officially there was no fund. When I pressed for a scrutiny of the expenditures, they were politely oblivious to the whole matter. 'Five millions a month! We know nothing about it,' they said, smilingly."

So the good work was organized. The lives of thousands have been saved, and the relief still goes on. Many have been engaged, but the rest freely give the lion's share of the credit to one man.

And yet a United States Senator recently asked "Who is this man Hoover?"

Progressive Spirit Manifested by Lynchburg Citizens.

Lynchburg, Va., July 14.—[Special.]—Since the reorganization of the Chamber of Commerce in March there have been established here through its efforts a branch of the Neumann & Mayer Company of Philadelphia for the manufacture of cigars; the fruit and vegetable packing plant of the Dawson Brothers Manufacturing Co. and the Norfolk & Western Manufacturing Co., which takes over the machinery, good-will, etc., of the old Norfolk & Western Overall Co. To have under control of the Chamber of Commerce an abundant and suitable tract of real estate, well located and in every way suitable for factory sites and manufacturing plants, the Lynchburg Industrial Development Corporation, with a minimum capital stock of \$60,000, was recently organized by a number of public-spirited citizens with the following officers: President, W. J. D. Bell; vice-president, A. W. Mosby; secretary-treasurer, Thomas A. Scott.

After organizing, the directors authorized the purchase of properties which will place in the hands of the corporation between 22 and 23 acres of land admirably suited for factory and manufacturing purposes.

A portion of one property has already been sold to the Dawson Brothers Manufacturing Co., Inc., and the Chamber of Commerce is now in negotiations with a large and important industry which it is confidently believed will locate in Lynchburg, using a part of this property. It is planned by the corporation to erect a large building on the other tract of land which will be used by a number of small manufacturing industries operating under the "factory loft" system.

News and Views from Our Readers

No Premature Peace.

J. E. FORBES of Ottawa, Kans.

There would have been no European war if, when General Roberts emphasized to the English nation the enormous preparations for war Germany was making, Great Britain had at once organized an army halfway in proportion to her navy. Kaiser William would have recognized that he was to have no walk-over, and Europe would have been in peace. The pacifists would not permit reasonable preparedness, and then came war beyond all precedent. When Europe went into war the pacifists would not permit this country to at once prepare against the contingencies which arise when other great nations are involved in war. When the United States protested that ruthless warfare must not be continued, or this country would enter the war with all its power, Germany assumed that as we had no army, and but a small badly-equipped navy, it made little difference with them, as they believed Europe would be overcome before we could prepare, after which she could turn upon this rich country and in short order collect of us her expenses for the whole war.

Having plunged Europe and America into war, will the pacifists be satisfied? They will not! When the war is seven-eighths fought out, they will, if they have things as they want, "ball things all up," as the pacifists wanted to do in the Civil War in 1864, who struggled to defeat Lincoln and make an immediate peace. A peace which would have been an excellent foundation for future wars.

This war must at all costs be fought to a conclusion that settles things, after which I hope to hear no more about war till my time comes to pass over the divide.

Some Strong Claims in Behalf of Cottonseed Flour as Superior to Wheat Flour.

G. A. BAUMGARTEN, Proprietor the Schulenburg Oil Mill, Schulenburg, Tex.

I am sending you by today's express a 10-pound sack of my finest grade Allison flour, bolted through the finest silk bolting cloth. I do not bolt this fine for general use, but merely to show what can be done with cottonseed flour after the gum or rubber parts from same have been extracted. I have worked on this flour now 11 years with a great deal of experimental work to find some way to extract the rubber or gum which surrounds the oil cells. A grain of seed contains about 365 oil cells on an average, and each oil cell has a very thin rubber-like coating around each to preserve the oil in the kernel. It was this rubber or gum formation which gave me so much trouble to eliminate. After eight years of experimenting I finally got it out without chemicals of any kind and made my first real cottonseed flour in 1914. In that year I put in machinery to make 48,000 pounds of this flour daily, and have made some changes and improvements since then.

I have not given up still further improvements, but the demand has been sleeping. That is, the general public has been asleep in taking hold of this the greatest food known in the world today. When the Agricultural Department was advocating the raising of more food and less cotton we called a meeting in Houston early this spring, and we were all opposed to decreasing the cotton acreage, as cotton is the greatest food plant known, and we further took this matter up at our Interstate meeting in Dallas, when you published a full report of same, and I was still further interested in your article of last week, "The Cotton Crisis as Viewed from Different Angles," and this article impressed me so much that I thought best to send you a sample sack of my Allison flour, that you may know what a fine bread and cake it does make. I am enclosing you a few of my leaflets, which will give you further information and also how to use this flour for best results for bread and rolls, for corn bread, biscuits, muffins, buns, waffles, hot cakes or pancakes, spice cake, layer cake, fruit and all kinds of ginger cakes, etc. No special instructions are necessary. Use about 20 per cent. of the Allison flour to 80 per cent. wheat flour, or cornmeal for corn bread, and you should have fine results. This flour here at home is used instead of rye meal or rye flour to mix with the wheat flour, this being a German

community, and they do not like the white bread, so this Allison flour is used in place of the rye meal or rye flour.

It is the most palatable bread known; it is also the most nourishing bread-making material known, and its curative qualities are getting better known every day. Thousands are using it for all kinds of diabetic trouble with great results all over the United States and in some foreign countries. They are also now having fine success with this flour for the wasting diseases and a great many other things. On account of its ease of digestion and its great nourishment, it makes this an ideal food for a great many ailments, and I hope that you will give this flour a thorough trial and convince yourself of the fine bread and cake it makes and also of its keeping qualities. It will not get dry and hard, like the common wheat flour products. This should make the greatest food for our armies and navy, as 20 per cent. of this flour added to 80 per cent. wheat flour will make a balanced ration and have as much nourishment as meat or eggs and is so much easier to digest.

A person can do hard work with this bread alone and fare much better than with most of the other foods. The country is still sleeping in taking hold of this in any great quantity as yet. My leaflets give size of bags and prices of same, also in sugar barrels. I could not use the wheat flour barrels, as this flour takes more room than wheat flour. At 4 cents per pound it is equal to \$7.84 per barrel of 196 pounds net weight, and has over 5½ times more nourishment than wheat flour.

Brunswick Would Like to Compare Liberty Loan Subscriptions With Cities of Its Class.

ALBERT M. SMITH, Secretary the Board of Trade, Brunswick, Ga.

Would it not be of great benefit in arousing the spirit of emulation between cities and towns for the floating of the next issue of Government bonds, soon to come, as I understand the situation, if the Secretary of the Treasury would give to the press of the country a statement showing the cities and towns that oversubscribed heavily their assigned quotas of the Liberty Loan? Believing such publication would help materially in arousing the communities to renewed effort, I have taken the liberty of writing the Secretary and suggesting that this be done.

We in Brunswick are intensely proud of the record made by this small city. The quota or assessment for Brunswick as fixed by the Treasury Department was \$142,000 of Liberty Loan bonds, yet Brunswick's subscriptions totaled \$1,101,000, according to the information given out by the local clearing-house association.

There may be many cities, both smaller and larger than Brunswick, that have beaten this record in proportion to their banking capital and population, but up to this time we have not heard of one that has, and we would like to know something of the records made by other communities.

The census of 1910 gave Brunswick only 10,182 population, and while it is true that there has been a great gain in population since that time, particularly during the past year, since the shipbuilding industry at Brunswick has given her the lead of all the ports south of Newport News, the greater part of the gain has been made up of wage-earners, who, though producers of wealth, have little or no capital for investment, even when patriotism impels them to make sacrifices for their country's welfare. A recent directory estimate puts the present population of Brunswick at 17,000 to 18,000, probably three-fourths of the new citizens being mechanics, most of whom are employed in shipbuilding and other new industries established since 1910.

Construction Activities Must Be Maintained.

LEROY M. LEWIS, Manager Publicity Department the Globe Automatic Sprinkler Co., Philadelphia, Pa.

I want to compliment you upon your attitude regarding the continuing of the present construction work even under the present high prices of materials.

I certainly agree in the view that there is nothing to forecast a decline in the cost of building materials for some years, even though we should witness an end of the war in the immediate future.

With the immense amount of building construction

that must be undertaken in the European country our facilities will be taxed to their capacity, and with the shortage of labor that all countries will witness there will certainly be no decrease in the cost of labor.

Every legitimate manufacturing enterprise should be assisted and carried forward to an early consummation.

I hope you will continue your good work in this respect, and compliment you upon your foresight.

A Prophet Without Honor in His Country Typifies Much of the Thought of the South's Capitalists About Their Own Land.

D. E. HIRSHFIELD, Waco, Tex.

When Captain Lucas was drilling for oil near Beaumont, Tex., in 1900 and early in 1901, he was looked upon as a "dreamer" or a "crank." The average business man had little respect then for the business ability of Captain Lucas. But the 30,000-barrel well which came from this man's efforts was the beginning of the industrial tidal wave which set in toward the Southwest and has continued ever since. The petroleum production of Texas and Oklahoma, coupled with the many other industries which became incidental, has drawn population and wealth into the Southwest and has done wonders for the industrial world.

Texas, Oklahoma and Louisiana are not only supplying this wonderful liquid wealth to the nation's assets, but are just beginning. Texas, to my knowledge, is wonderful in its mineral wealth, so far absolutely undeveloped. We have large asbestos deposits, copper and gold, iron and lead, silver and quicksilver and asphalt. I have just returned from a trip to a certain locality of Texas, and on the surface of the ground found a body of graphite fully 60 feet in width. This will run high in purity and quality. In speaking of this discovery to local friends, this remark meets me: "It can't be worth much, for if it is of any value somebody would have developed it long ago." I once knew a man who refused to investigate a similar proposition for the same reason, but the man who did investigate took hold and he and his friends made millions out of it.

If the resources of the South are to be developed, I mean the new products yet undeveloped, it will have to be done by some "dreamer" or "crank" like Captain Lucas.

I know where lies a solid body of rock asphalt, saturated with dried oil (asphalt) right on the surface, and I have endeavored to get men of money to take hold and develop this virgin field of immense wealth. Invariably I am met with these excuses: "We are so engrossed with other territory that it is impossible for us to consider your proposition. We thank you, however, for calling this to our attention," and again that oft-used expression, "If it is such a good thing, why has not someone else taken hold."

Is it not possible for your great influence to eliminate much of the skepticism which exists among Southern capitalists, so that all the glory will not be won by the shrewd man of business from the industrial East? It was the Eastern blood injected into the Southwest which made millionaires in the oil business. The Southwestern business man took hold after the Eastern men got a good start. The latter, however, got too good a start for his brother to catch up. Please send us more of the Eastern men of money and brains to educate our men of money.

For the Nation's Welfare.

SANFORD BROS., Direct Representatives of Manufacturers, Chattanooga, Tenn.

We enclose herewith our check for \$41 covering renewal of our subscription to July, 1918.

We take this opportunity also to express our approval and appreciation of the very substantial service we feel you are rendering all true American citizens.

South's Greatest Upbuilder.

N. CRAIG, Secretary to Ernest Meres, Tarpon Springs, Florida.

We consider the MANUFACTURERS RECORD the greatest upbuilder for the South.

Outlook for an Oil Strike on Gulf Coast of Mississippi

GEOLOGICAL SIGNS READ BY OBSERVER AS INDICATING THE PROBABLE PRESENCE OF OIL—HERE ALSO CENTER OF WIDE AREA OF MAGNETIC DISTURBANCES—INTERESTING THEORIES PRESENTED.

By CHAS. E. CHIDSEY, Pascagoula, Miss.

The Atlas Oil Co., that has been drilling for oil near Vandave, Miss., as already announced through the MANUFACTURERS RECORD, has moved to another site some 3.5 miles from the former well. It is stated that at a depth of 2100 feet drillers struck 100 feet of oil-bearing sand with a showing of gas, but not deeming the quantity of oil sufficiently large, they moved to the spot where they are now boring their second well, having commenced July 2.

Cunningham Craig, in his work, "Oil Finding," page 51, says: "It cannot be too clearly stated and understood that an oil sand is a sand containing oil, a gas sand one containing gas, and a water sand one containing water. (The italics his.) Remove the contents, and they are no longer entitled to the names, though they may be mapped geologically and designated as the horizons of such and such oil, gas or water sand." This fact settles the matter as to the Pascagoula field, and it remains now only to determine in what quantities the oil may be found, and its quality. To do this may require several more wells to be sunk.

The site chosen for the second well is at what is known as Rogers Island, a dome structure that stands at the point where the Pascagoula River divides itself into two streams forming the East and West Pascagoula rivers, and from thence flowing separately for 14 miles until they reach the Gulf of Mexico, and it is worthy of mention that while the East Pascagoula is as crooked as a snake's trail, the West river flows almost in a straight line.

Between these two rivers is an extent of salt marshes 14 miles in length and some 3.20 miles in width, forming an island of 44 miles in area, known as Lowery's Island, which is intersected about 1.5 miles from the Gulf by the Louisville & Nashville Railroad, running east and west. This summer, while a dredgeboat was cutting a canal for the new speedway through the marsh island, about 200 yards north of the Louisville & Nashville Railroad, it cut into and exposed a deposit of marcasite, which seems to be quite extensive, as it extends all the way from the West Pascagoula River to the East Pascagoula, a distance of 3.20 miles. This marcasite is to be found in more or less quantities not only in the roadbed thrown up by the dredge, but in the walls of the canal, and there is no danger of one mistaking it, as it is in quantities sufficiently large to attract the attention of the most casual observer, and besides there is a most pronounced odor of sulphur in its vicinity. In previous numbers of the MANUFACTURERS RECORD I have given some hints of the nature and significance of a find of marcasite, but it may be well to enter more fully into the details of its nature.

Marcasite is a bi-sulphide of iron, and its chemical formula is FeS_2 , which means that to every atom of iron there are two atoms of sulphur. There are several forms of it, as cockscomb and spear marcasite, so called from the shape of its crystals, but is most commonly known as white iron pyrites from the lightness of its color, being a pale gold. Its presence is interesting for more than one reason, for if it exist in sufficient quantities it can be mined and utilized for the sulphur and iron that it contains, which when separated, as can easily be done by heat, are commercially valuable.

In his work, "Finding Oil" (published 1912), Mr. E. H. Cunningham Craig, discussing the presence of iron pyrites in its several forms in the earth (page 49), says:

"It is perhaps not out of place to mention here that the limestone oils frequently exhibit some differences from the sandstone oils, and though these differences may not be essential, they may be of considerable practical importance. Thus many limestone oils are noted for the percentage of sulphur which they contain; their outcrops are often marked by sulphur springs and evolution of hydrogen sulphide, while crystals of pure sulphur may be found lining cavities in the oil rock. Spindle Top, Marmatain and Maidan-i-Naphtun in

Persia, and Khatan, Spintangi and Kirta in Baluchistan are instances. In these cases there is reason to believe that the sulphur compounds may not be entirely original in the petroleum, but may be due to the action of the oil and water on sulphides contained in the strata. In oil sands and their associated clays, pyrites and marcasite are not uncommon, but in the limestones of the above-mentioned oil fields these minerals are apparently absent. It is possible that the petroleum may have absorbed and incorporated sulphur compounds encountered during its migration to and through the limestone which it now occupies. In the cases of Khatan and Spintangi the shales where the oil originated are full of pyrites in the area where the carbonaceous phase is in evidence, and the Harna Valley coal, as the bituminous coal worked in these shales is called, contains a large quantity of pyrites.

"It is not suggested that sandstone oils do not contain sulphur compounds; many of them are unfortunately very rich in this, in oil, undesirable element, but there seems to be some condition affecting oils enclosed in limestone which makes it possible to decompose any sulphide present and to incorporate a percentage of the sulphur in the oil, which percentage naturally becomes more conspicuous as the sulphur compounds are concentrated by the inspissation of the petroleum."

Then again, on page 109, he continues: "When the outcrop has been subjected to weathering for long periods without the access of oil or bitumen, it may show very little trace of its former impregnations. In such cases the mode of weathering or the traces of sulphur compounds may be sufficient to prove that we are dealing with an oil rock. Any sand may be an oil rock, but if in examining a section one finds certain bands of softer and less coherent, darker in color and with rounded contours, as compared with otherwise similar sandstones in the same section, it may be presumed that if any of the strata have been or are beneath the surface oil bearing it is these, and if followed up in the field and studied under different conditions as regards structure and exposure, clear and unmistakable evidence may be forthcoming.

"Faint stains or flecks due to the traces of sulphur from decomposed sulphur compounds often afford additional evidence, and may be the last remaining traces of former impregnations."

The marsh land where this deposit of marcasite has been found, with the exception of a few sections sold to individuals, belongs to the State of Mississippi, and is for sale in lots of not exceeding 160 acres each, the price to be fixed by the Governor, auditor and State land commissioner. That the deposit is probably an extensive one is shown by the color of the soil, which is a blue clay. Iron pyrites and marcasite when exposed to the air oxidizes rapidly and changes into a ferrous sulphide, or, as it is better known, iron vitriol, green vitriols or copperas and clay when it is highly charged with it has a blue color.

When cutting the canal through this marsh to make the embankment for the Louisville & Nashville Railroad they cut through this deposit, and about midway between the East and West Pascagoula rivers cut through a small dome structure of about one acre in extent, and which is covered with a deposit of clams that live only in brackish water and known as the Rangia Cuneata. This dome is hardly more than 18 inches above the level of the marsh, but the clamshells give indubitable evidence that it was once in the bed of the estuary of the river. One passing through this canal could not have failed to notice that the water ran in a swift current to the West Pascagoula River until it came to this point, when it turned suddenly and ran swiftly to the East Pascagoula River, showing that there was elevation at this point that divided the waters. These dome structures, with gas escapements, are common along the West Pascagoula River, some of them

being 10 to 15 feet high, the largest one being Davis Island, near West Pascagoula, and of some 15 or 20 acres in extent. Very few of these structures are seen along the East Pascagoula River, though there is one great one, the peninsula upon which stand the cities of Moss Point and Pascagoula, which is a dome structure some 3.5 miles wide and 6 miles long.

All of these dome structures have the characteristic deposits of clamshells, of which more anon. In my article in the MANUFACTURERS RECORD for March 23, 1916, I stated that the greatest magnetic variations were to be found between longitude 88 deg. 30 min. and 88 deg. 40 min., and Lowery Island lies just midway between these two points, and whether significant or not, the deposit of marcasite lies in the center of the area of greatest magnetic disturbance along the Gulf coast from Perdido Bay, Florida, to the Mississippi River.

The question has been asked men, and should be answered, Why attach any importance to these heaps of clamshells, for they may have been placed in their present position by the Indians during one of their feasts. To this I answer that these shells give mute but irrefragable evidence that they were where now found long before the Indian ever came to the Gulf coast. (When Le Moyne D' Iberville came to the coast in 1699 there were no Indians dwelling on the coast; they lived in the interior 12 or 15 miles away.) When the Indian caught clams or other mollusks he got out the meat by roasting them in a fire or by breaking their shells with some hard substance (they had no knives), and thus chipping or fracturing the edges of the shells. I have examined hundreds of these shells and have never yet found one that had been chipped or that gave evidence that it had been roasted in the fire. Let it not be forgotten that oyster shells are never found in these beds of clamshells, save where they have been dropped on the surface by some passing fisherman, for you may delve down through these beds of clams and find only clamshells, save now and then the shell of a small conch that feeds on the clams by boring through the shell of a young clam. It is then evident that the clams in these beds died all at one time (in each bed) through suffocation by being exposed to the sun and air, and were left exposed where now found today, and probably at a time long before the oyster first made his habitat in these waters and before the appearance of man.

Possibly some upheaval of pent-up gas in the depths of the earth raised these dome structures from the estuary of the Pascagoula, and the clams being thus deprived of their native element and exposed to the air and sun died, leaving their shells as testimony of their fate to be read by future ages.

That these beds of shells are of very great antiquity is shown by the gigantic live oaks and long-leaf yellow pines that crown them and send their roots down through the shells. Some of these oaks are 5 to 6 feet in diameter, and the pines proportionately large, and as the long-leaf yellow pine and live oak do not grow in low wet lands, but only where the soil is high above tidewater and is well drained, we have here evidence that these shells first appeared above the estuary of the river ages ago. After this uplifting had occurred some passing bird, or perhaps the wind, dropped an acorn or pine mast upon the heaps, which, taking root, sent their boughs aloft into the sky, and have been for long centuries keeping a lonely vigil over the secret of the earth, yet they whisper it to the silently flowing river and every passing breeze, but it is only for him that hath ears to hear.

The Sixth Unit at Tallulah Falls.

All contracts have been awarded for the construction and machinery required for the sixth unit (announced last week) at Tallulah Falls for the Georgia Railway & Power Co. of Atlanta. C. G. Adsit of Atlanta is the consulting engineers, and the contractors are: S. Morgan Smith Company, York, Pa., water-wheels; General Electric Co., Schenectady, N. Y., electrical apparatus; Riter-Conley Company, Pittsburgh, penstocks. This \$330,000 installation will develop 18,600 additional horse-power, thus completing the station to its full capacity of 108,000 horse-power. The details include the following: Steel penstock, 5 feet in diameter, 1100 feet long, operating under 600-foot head; 18,600 horse-power Francis type water turbine; 3-phase 60-cycle 6600-volt 12000 K. V. A. generator; three 4000-kilowatt 6600 to 110,000-volt water-cooled transformers; necessary high and low tension switches for control of transformers and generator.

Co-operation, Co-ordination and Unceasing Team Work as Factors in Our War Problems*

No body of men can get together at the present time without soon discussing the subject of the war, which is uppermost in everyone's mind.

The war is the one dominating factor in the world-life, and thrusts itself before our thoughts whether we wish it or not. We are in the war at last, and will remain in it to the end. Whether it shall be a bitter end or a bright end will depend largely upon ourselves, as it is now our war.

It has been stated many times that modern war was largely a question of mechanics and engineering, a statement with which we must all agree. It is, therefore, self-evident that engineering must take a leading and dominant position in the war work. Now, the electrical engineer stands for about the latest thing in engineering development; his activities embrace practically all other fields of engineering, being, so to speak, the last word in engineering. The electrical engineer must, therefore, realize that this is his war in a very personal and particular sense.

War calls for supreme sacrifices and the deepest devotion, but it also demands something more difficult to give, and that is work. War may be said to be the personification of work, not only individual work, but especially organized and disciplined work, disagreeable, dirty, heart-breaking, back-breaking, nerve-racking work, but always work. No nation of loafers ever won a war. Other things being at all equal, that nation or people who are willing to work the hardest will surely win the victory. Now, I wish to point out that the enemy we are fighting is recognized as the most industrious organization in the world. Our enemy has prepared for war for 50 years, and has been working with ever-increasing energy ever since the war started, three years ago. We made no adequate preparation during all this time, and therefore started with a fearful handicap of lost time and lost opportunities. We must not delude ourselves that our enemy is exhausted, but remember that he has the advantage of a "flying start." We must accelerate at an incredible rate if we are to get our war-motor going fast enough, soon enough, to catch up.

Our enemy boasts that we have started too late. We must, by the hardest work, directed with scientific skill and accuracy, organize and effectively utilize all our power of work to make his prophecy an idle boast.

The country is trembling with eager anxiety to help. Men and women are offering their services and their money. All eyes are turned toward Washington, and to many everything seems confusion, and as a result we are full of criticism. Now, I think it is clear that nothing is to be gained by destructive and captious criticism. We must discipline ourselves with patience, and if we take a broad view, we must admit that progress is being made. We must remember that a democracy of 100,000,000 people, whose thoughts and habits have been entirely those of peace, cannot change to the methods of war in a day, or a month, or even a year.

War is a business, and must be handled as a highly-organized, centralized enterprise. We must, no matter how repugnant it may be to our habits and thoughts, temporarily adopt such methods of our enemy as are known to be efficient and successful, because the penalty of failure is death. The things connected with war are so repugnant to our idea that it takes time to realize the necessity for and make the colossal changes demanded. We must, therefore, as I have stated, avoid captious criticism and confine ourselves to constructive criticism, and that sparingly and sympathetically administered.

There is one idea which we must abandon. The great majority of our people, having no acquaintance with science or engineering, is prone to imagine that this war will be settled quickly by some wonderful new invention, as if by an act of legerdemain; but you engineers realize that such a thing is practically impossible. It is so hopeless that it is cruel to permit any such idea to take hold of the American public. Neither is it possible for the war to be settled by the act of some hero or superman. It can only be settled by the united efforts of thousands of men, each contributing his bit.

*Address by E. W. Rice, Jr., president of the American Institute of Electrical Engineers, at annual meeting, New York city, July 7, 1917.

"Team play" in our civil army at home is as essential as in our fighting army abroad.

I venture to suggest that we cannot all occupy desks at Washington, and it is well for us, and for the country, that we cannot. We can, however, put ourselves and our business in such condition as to meet whatever demand is made upon us. Only relatively few can be useful in the direct service of the army and navy, but there is plenty of honorable work and useful work for us to do. The most effective work for most of us will be in the shops and offices at home, and everyone who does his work loyally and well is as much a factor in our organized war as the man at the front.

Now, properly understood, the fact that no single great invention is likely to be made which will win the war is no cause for discouragement. It does not mean that there will be no improvement, no new inventions, no new methods devised and put into effect. It simply means that we must not wait for the miracle which will never appear, but get to work and energetically take advantage of all present knowledge. We must survey the field, get at all the facts, carefully determine our plans and then proceed to put them into practical execution.

Take, for example, the matter of shipping. This perhaps presents the greatest immediate problem of the war, frightfully complicated as it is by the submarine. I feel sure that it can be successfully solved, if we are content to solve it by the simple, common-sense methods used by engineers and successful business men in the ordinary course of business. The problem must first be carefully investigated, all available data quickly obtained and checked, and all new conditions considered, after which a broad-gauged, well-considered plan or plans can be formulated, criticised and then put into effect.

Of course, it is elementary to say that we must provide shipping in enormous quantities to replace that destroyed and to provide for increased demands. It is evident that time is the essence of the problem. We must, therefore, build the greatest tonnage in the shortest time. The ships must be manned and navigated to their destination and the most efficient methods provided for docking, unloading and loading.

With the situation such that the race is between shipbuilding and ship destruction, with the destruction many laps ahead, it is vitally important that ships should be loaded and unloaded with the utmost expedition. We have recently heard of an instance where a large ship, after running the gauntlet of a voyage to England, was forced to visit several different ports and waste one month's time before starting the return voyage. This loss of time is equal to the loss of a complete voyage. The net tonnage delivered per month is the only thing that counts, therefore ship tons saved is worth more than ship tons built. Quick means of loading and unloading at specially-devised terminals, here and in Europe, should be constructed and put into operation. The methods are known. It simply remains for us to organize and apply them.

We must see to it that the kind of ships, in respect to size, material and speeds, are such that the greatest tonnage may be moved across the seas in the shortest time. In the time element must, of course, be considered the time required to build such tonnage. If an investigation should indicate that cargo ships can be built which will successfully withstand one or more torpedo attacks, and which can also be provided with speed and armament sufficient to give them a good chance of fighting off and getting away from a submarine, they should be built no matter whether such ships cost more or are less adapted for use after the war, or take a little longer time to construct than those of the ordinary type.

It is entirely within the range of possibility that such ships may prove to be the only ones which will be able to navigate the seas with any decent chance of surviving. It would seem clear that unless the submarine is swept from the seas it is hopeless to build a large tonnage of slow-moving, relatively small and inadequately defended ships, as the net tonnage which could be delivered by such a fleet of ships will be too insignificant to be of any material value. We would have bet on the wrong horse and lost; therefore, I hope that we

will have the foresight to build as large a number as possible of big, comparatively torpedo-proof cargo ships as soon as possible.

We should also, at the same time, consider whether it is worth our while to continue building large dreadnaughts, battle-cruisers and the like, which cannot possibly be finished for years to come. Our shipbuilding facilities are limited, and if the facilities now devoted to the construction of dreadnaughts could be immediately diverted to the construction of large, indestructible, high-speed cargo ships, which can be built in half the time, we will be taking a great step toward solving the problem.

So much for what might be termed the "defensive method" of attacking the problem. Along with this defensive plan we should put into execution every practical offensive plan of attacking the submarine, such as methods of detection when submerged, methods of attack by means of destroyers, mines, aeroplanes and special artillery. All such methods should be and probably are being developed, and while no one of them will prove to be the panacea by itself, collectively they will be of the greatest value in reducing the menace. However, I think it is well to emphasize the fact that the only safe and sane plan of action is to assume that we can only win by pushing the development of all practical-looking methods of attack and defense at the same time, and to the limit of our ability.

Now, I am well aware that there is nothing theatrical or startling or novel in the above suggested solution. For this reason it is not likely to appeal to the great non-technical public, but there is no doubt in my own mind that it represents the scientific and common-sense method, and that if followed with patience, persistence, vigor and diligence, it will prove successful, and if successful, the war cannot be lost. All the other problems of the war—the aeroplane, army, navy, food, manufacturing, farming, transportation, etc.—can be successfully solved by the same scientific but simple and common-sense methods.

It is a great satisfaction to notice that this country has at last awakened to the importance of developing that great American invention, the aeroplane, and of manufacturing it on a great scale. We should do everything to help accelerate this work. If we can get aeroplanes of the right kind to Europe soon enough and in sufficient quantities, experts tell us that it will do more to win the war than a large army.

We must also not neglect the development of the submarine, because if we fail to find a way to drive the submarine from the seas in short order, and fail to make relatively unsinkable and uncatchable ships, we may have to rely on big freight submarines, properly convoyed by fighting submarines, if necessary, in order to get food, material and soldiers to Europe.

We must not forget that, after all, all these things must be done by men collectively, and that, therefore, it is essential for us to think and act collectively, and with reasonable unanimity. We must co-operate and not nullify our power by quarrels among ourselves. This means that we must be willing to give consideration to the views of others, be ready to make reasonable compromises. If, after a long and fair trial, we find that we have made a mistake in our selection of leaders, we should then promptly replace such leaders by those more competent, who will surely be found. This is the only way in which a democracy can work and form an effective and efficient organization.

I think I have said enough to indicate that there is plenty of work for engineers at home, as well as abroad; in civil life as well as camp life. Engineers have a great opportunity in this way and a heavy responsibility. You have special knowledge, experience and a forward-looking point of view which the country needs, and it is your duty to see to it that you are given the opportunity to make effective use of your talents in the service of the nation, and if you are not given that chance, you must persistently demand it until you get it, and then I feel certain that the victory will be on our side, our civilization will be saved and the world will be made a safe place for all decent people and those who survive will be able to turn again to the satisfaction and joy of a useful and peaceful existence.

The Ohio Board of Charities has recommended to the State Council of Defense a census of all vagrants and loiterers, with strict enforcement of vagrancy laws.

Development of Sulphur Deposits in Culberson County, Texas

By WM. B. PHILLIPS, Mining Engineer, Houston, Tex.

In the Maverick Springs district, Culberson county, which is from 15 to 20 miles west of the Santa Fe lines running north from Pecos, there are now five companies organized for the purpose of mining and extracting sulphur. These are the Michigan Sulphur & Oil Co., Praetorian Building, Dallas; the United States Sulphur Co., 501-505 Linz Building, Dallas; the West Texas Sulphur Co. (Dancy & Hines), Widener Building, Philadelphia; the Toyah Valley Sulphur Co., 405-406 Scanlan Building, Houston, and the Sun Sulphur Co., Shreveport, La.

These companies have holdings from Maverick Springs to the upper part of the Virginia Draw, a distance of about five miles. Practically all of the development work in this district has been done by these companies—most of it by the Michigan Sulphur & Oil Co., the recently-organized United States Sulphur Co. and the West Texas Sulphur Co. The most extensive work has been done by the Michigan people, and they have had a single-cylinder steam extractor in operation and have produced from 200 to 250 tons of excellent sulphur. The plant is capable of producing from 8 to 10 tons of sulphur per 24 hours. The sulphur is hauled by motor truck to Orla, a station on the Santa Fe 43 miles north of Pecos, 20 miles distant, and has been sold at \$25 a ton f. o. b. railway.

No systematic cost accounts have been kept, so that it is impossible at this writing to give the details of mining, haulage, extraction, transportation or overhead. None of the companies has a chemist, and there is no data bearing on the business from this standpoint. The content in the sulphur in the material going to the extractor is not known, nor the amount of sulphur remaining in the refuse from the extractor. It is, however, evident from an inspection of the refuse that the extraction is not complete, but just how much sulphur remains undissolved from any one charge is not known. Under a steam pressure of 50 pounds the temperature within the cylinder should be sufficient to liquefy the sulphur in the ore, but the fact remains that all of the sulphur is not extracted.

It is not known whether this failure to extract the sulphur is due to the chemico-physical nature of the ore, to clogging within the body of the ore exposed to the heat in the cylinder or to a combination of causes.

The ore is native sulphur, crystallized and amorphous, held in earthy gypsum (gypsite), and in a more or less disintegrated gypsum and dolomite. The crystallized sulphur is, of course, readily recognized, but there is a variety of amorphous sulphur of a light yellow color resembling a yellowish, fine clay that may be mistaken for clay by the ordinary observer. In many places this kind of ore sets in near the surface, and, indeed, outcrops in several localities.

In places there is to be seen a sort of bituminous sulphur, of a dark brown color and loose texture, acid to the taste and destructive to clothing, etc. Acid water comes into the pits, and there is more or less natural gas and sulphuretted hydrogen, both of a combustible nature, and, therefore, requiring thorough ventilation. The sulphuretted hydrogen is easily detected by its odor, but the natural gas has no distinct odor, and on this account is all the more dangerous. The presence of the combustible gases will assuredly influence the methods of mining to be adopted.

The prospecting and development work in the Maverick Springs district has not been conducted in a systematic manner and it is due to this fact that there can be no reliable estimates of available tonnage. A good deal of work has been done, and a good deal of money has been expended, with no definite plan in view. Systematic sampling has been almost entirely neglected, and this of itself is far more important than the erection of an extracting plant. We see here a striking illustration of the tendency to build mills, plants, etc., before the supply of available tonnage has been determined, a tendency brought about partly through the insistence of small stockholders in their anxiety for dividends, and partly through lack of knowledge of what mining and treatment really mean. A mill or extraction plant is about the last thing to

be considered. It presupposes an extensive and intensive acquaintance with the property that will enable one to plan the real development work and to think of what he intends to do with the material after it has been mined.

The deposits of sulphur in West Texas are not veins or fissures with well-recognized walls. They are beds and pockets of lateral extent, for the most part. They may, in places, extend to considerable depths, but, except in a few localities, the depth to which workable material extends is not known. A few borings have been carried down to 75 and 100 feet, but for the most part the workings are shallow and practically all of the material treated has come from depths not exceeding 20 feet.

This brings one to the main question in connection with the development and utilization of these sulphur deposits, viz., the bringing in of supplies, equipment, etc., and the transportation of the product. Doubtless a small and, perhaps, a profitable business may be conducted by means of motor trucks and trailers, but no considerable enterprise can be conducted without a railroad. Two routes may be mentioned, the one connecting with the Texas & Pacific Railway at Pecos or Toyah, the other with the Santa Fe at Orla, Reeves county. The first would necessitate the building of a line more than 40 miles in length through a territory that would contribute but little freight. The second would necessitate the construction of 20 miles of road, but there would be no freight except to and from the mines. The line from Orla could be built for \$6000 to \$7000 a mile, or from \$120,000 to \$140,000. The line from any point on the Texas & Pacific might be built at the same cost per mile, but the total expense would be considerably more—from \$50,000 to \$75,000 more.

Just how far east the sulphur could come without entering territory that would naturally be commanded by the sulphur plants at Sulphur, La., and Freeport, Tex., remains to be seen. The most logical market would seem to be to the north, northwest and west, especially toward the northwest. It is in this direction, however, that competition would be met from smelting establishments that are converting their sulphurous fumes into sulphuric acid. Of the total make of sulphuric acid in the United States, about one-fourth is made from smelter fumes, but all of these plants are not in the West.

At least one large western copper company has been looking around for regular supplies of sulphur to be used in connection with leaching processes, and has already done some prospecting for sulphur in West Texas.

I believe that a regular and profitable market for West Texas sulphur depends on the building of a railroad into the district.

How England Is Drastically Reducing Food Consumption.

Americans who are asked to limit their consumption of bread, meat, sugar and drink for the sake of supplying our Allies with food naturally want to know what the Allies themselves are doing in the way of food economy. Is John Bull, for example, wearing his belt tighter than before the war?

That he is, is the opinion of a well-known American student of political economy and writer, just returned from England, who says he was hungry over there. He simply could not get enough to eat at any meal in hotel or restaurant to satisfy him.

The regulations of the Ministry of Food, controlling the serving of meals in public eating places, are exact and detailed, and they are being enforced. One cannot have more than 5 ounces of meat at any meal, and this means 5 ounces of meat in the kitchen as it comes from the butcher. When it comes to the table as edible meat it is half that weight. Nor can one have more than 2 ounces of bread, which bread must be at least 12 hours old, or more than two-sevenths of an ounce

of sugar at any meal. The London bakers are making rolls of 1 ounce and 2 ounces each. They are simply miniatures.

The regulation against waste is drastic. No bread may be thrown away. A piece of bread was found in an ash can by the police. The household was fined 20 shillings. One hundred and fifty pounds of stale cake were found thrown out behind a restaurant. The proprietor was fined 20 pounds (\$100).

No light pastries, muffins, crumpet or fancy tea cakes may be made. No currant or milk bread may be made, nor any sugar be used in making any bread. Many similar restrictions exist, and are enforced.

In addition to the governmental regulations, the Food Controller carries on continuously a strong propaganda for voluntary rationing, cutting out of waste and food saving generally in the home. All households are asked to limit their consumption of bread to four pounds a week per person of meat to two and a half pounds and sugar three-quarters of a pound. Those families which agree to do this put up in a window, facing the street, so that all may see, a conspicuous card, bearing the legend: "In Honour Bound We Adopt the National Scale of Voluntary Rations."

This pledge of voluntary restriction has been widely accepted. In the little town of Church Stretton, containing 253 houses, the card is displayed in 225. And there are other records nearly as good. In some towns the average ration per person has been reduced to an amount below that asked for by the Government.

The consumption of flour in England and France is being reduced to between three and four pounds per person per week, or about three-fifths of the American consumption, despite the fact that Europeans are ordinarily larger bread eaters than Americans. The Europeans scarcely know cornbread, and therefore are at a still greater disadvantage. Reduce our wheat bread consumption we must, and it is up to each one of us, or the Allies will come very near starvation.

Naval Academy Improvements to Cost \$3,000,000.

Two contracts involving a total of \$3,000,000 have been awarded by the Navy Department, through the Bureau of Yards and Docks, for improvements at the Naval Academy at Annapolis. These betterments include an addition to Bancroft Hall, the quarters of the midshipmen, which will correspond with the present structure. The addition will be three stories high, with granite exterior, having a center structure and two long wings. Bancroft Hall is the largest building at the Naval Academy, and cost about \$1,000,000. In addition to the Bancroft Hall addition, contract has also been awarded for an addition to Isherwood Hall. This building is a three-story structure, with a granite base and exterior of gray finished brick. The addition will conform to the present structure, whose original cost was \$400,000. The two additions, it is said, will increase the accommodations at the Naval Academy from 1000 to 2200 midshipmen.

Plans and specifications were prepared by J. H. de Sibour of Washington; general contract to J. Henry Miller, Inc., of Baltimore.

Sheffield Coal & Iron Co.

Arrangements have been completed for the refinancing of the Sheffield (Ala.) Coal & Iron Co., and the plant will be put in operation at the earliest date possible. James Gayley, president, New York, advises the MANUFACTURERS RECORD that the financing provides ample funds to build at Sheffield a by-product coke-oven plant, and that the furnace and mines will be equipped with the necessary modern facilities for economical operation to insure a continuous operation of the property.

On account of the high cost of construction and the difficulties in securing delivery of building material, construction of the by-product ovens will be deferred for the present. Meanwhile, coke will be made by the company's beehive ovens at Jasper, Ala. The general manager of the company will be W. L. Kluttz, who has been vice-president and a director of the Central Iron & Coal Co. at Holt, Ala. His office will be at Sheffield.

Increased Production and Fewer Accidents Possible with Adequate Factory Illumination

By H. E. MURPHY, St. Louis, Mo.

It is a lamentable fact that in the conduct of nearly every branch of industrial activity in this country practically no attention has been given the problem of providing adequate and scientifically correct illumination for the conduct of the plant at times when little or no natural light is available. The loss which is the result of this neglect has been variously estimated as between \$300,000,000 and \$500,000,000 yearly, being principally due to reduced efficiency of employees, spoilage of materials in process and accidental injuries sustained by employees which might have been avoided had proper illumination been provided.

With the entrance of this country into the world war, the necessity for productive efficiency as close to 100 per cent. as is possible makes itself apparent when it is considered that a large percentage of productive labor will be withdrawn from the industrial field to bear arms in the conflict, and that the demand for practically all kinds of manufactured articles will be greater than ever before.

The fact that the advantages of good illumination are not readily convertible into actual money values and in some cases somewhat intangible is largely responsible for the failure of this phase of industrial development to keep pace with the general development which has been made in machine tools and other devices calculated to increase output with little or no increase in operating cost, in most of which cases it has been possible to accurately compute the exact saving which might be made before reaching a decision as to the desirability of installing the labor-saving equipment.

In order to set forth in as clear and concise a manner as is possible the advantages which may reasonably be expected from an improvement in lighting conditions, a subdivision of the general advantages may be made as follows:

1. Reduction of accidents.
2. Greater accuracy in workmanship.
3. Increased production for the same labor cost.
4. Less eye strain.
5. Promote better working and living conditions.
6. Greater contentment of the workmen.
7. More order and neatness in the plant.
8. Supervision of operation made easier.

Items 4, 5, 6, 7 and 8 may all be considered as having a direct bearing upon the reduction of accidents; items 2, 4, 5, 6, 7 and 8 as increasing production, with no increase in labor cost; items 2, 4, 5, 6, 7 and 8 as reducing the amount of spoilage of materials in process; items 1, 4, 5, 6, 7 and 8 as reducing the labor turnover, all or any of which results will materially increase the productive efficiency of any plant of whatever character.

That the number of accidents sustained by industrial workers bears a decided relation to the amount of light is proven by the graphical chart Fig. 1, which shows the number of industrial accidents reported from a group of plants throughout three years, compared to the average amount of darkness, cloudiness and sunshine which existed during the same time. The plants from which the records were obtained may well be considered as giving an approximate idea as to average conditions throughout the country both as regards the number of accidents and as to the average light. The increase in the number of accidents from year to year is no doubt due to an increase in the number of men employed, the percentage holding approximately the same.

It will be noted that even throughout the summer months, when lighting conditions were at their best, a considerable number of accidents were present, which would seem to indicate that even with the best possible illumination it is not possible to entirely eliminate accidents. Granting the truth of this assumption, there still remains the possibility of holding the number of winter month accidents down to the summer value, and of possibly decreasing the number which will occur in summer months.

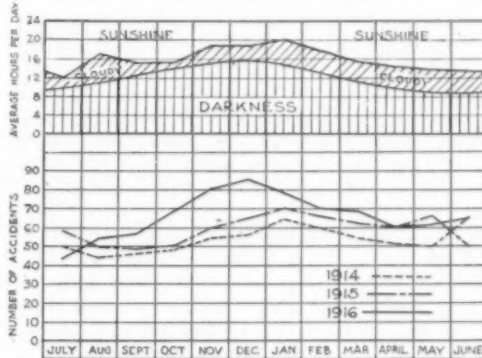
An inquiry into the probable causes of preventable accidents which occurred during dark hours disclosed the fact that 25 per cent. were attributable to the following causes: Tired eyes, due to strain; workmen un-

able to see objects; indifference to work, due to nervous strain and psychological effect; contrast in light intensities.

If a workman tries to work in poor light or with a light so located as to glare directly into his eyes, the inevitable result is eye fatigue. In this condition his distinctness of vision is considerably reduced and the likelihood of his getting his fingers into saws, gears or other moving parts of machinery is increased.

A considerable number of accidents are directly traceable to workmen stumbling over tools or other obstacles in the dark. These accidents are the result of insufficient general illumination or of a too rapid change from brilliant illumination to that of less intensity, the eye being unable to adjust itself to a sudden change in intensity.

The psychological effect of lighting plays an impor-



GRAPHICAL CHART, FIG. 1.

tant part in accident prevention. When the eyes are tired, the workman becomes indifferent, but with good light the natural instinct is to be alert and on his guard. The indifference of a workman may cause an accident to himself or his fellow-workmen, and is always a drawback to the progress of the factory.

The cost of one accident is often greater than the expense of providing good lighting for several years.

That production may be increased with no increase in labor cost is difficult of proof, but an analysis of an hypothetical case, coupled with an actual instance, may serve as casting some light upon the matter upon which deductions may be based which are applicable to any particular case.

It may be safely assumed that the energy cost, cleaning, interest and depreciation, show the annual operating cost of an adequate illuminating system for an average shop bay of 650 square feet as 50. If five men are employed in such an area at an average wage of 25 cents per hour, the total labor cost, including superintendence and indirect shop expense, would be from \$5000 to \$7000 per annum. On this basis the lighting will cost from seven-tenths to 1 per cent. of the wages, or the equivalent of from four to six minutes of operating time per day. It is safe to assume that poor lighting will cost half as much as good lighting, or the equivalent of from two to three minutes per day. It is, therefore, necessary to save only from two to three minutes each day of a man's time in order to pay for the difference between good light and bad, neglecting all the desirable features of good light except its time-saving quality.

A superintendent of a shop employing a large number of men stated that due to poor light their workmen have lost much time, sometimes as much as from one to two hours per day under certain conditions.

If good light will add an average of one-half an hour per day, which appears a reasonable figure, to the output, these 30 additional minutes represents an increase in output of 5 per cent. brought about through an expenditure equal to one-half of 1 per cent. of the wages for improved lighting, or a saving equal to ten times the expense.

The saving to be effected by reducing or eliminating the spoilage of materials will necessarily vary, depending upon the degree of accuracy required as well as the susceptibility of the product to spoilage.

When some of the various reasons for spoiled material are analyzed, it becomes immediately apparent that poor lighting is principally responsible. The following list, while by no means complete, will suggest some of the reasons for spoiled work:

1. Figures on specifications misread.
2. Measurements misread.
3. Machines improperly adjusted.
4. False marks on work mistaken for center-punch or other marks.
5. Sizes on drills misread.
6. Poor work, due to tired eyes.
7. Men careless, due to headache and nervous strain.

The experienced shop man will at once recognize in this list many of the proven reasons for spoilage of materials, and will also at once realize that proper lighting will practically eliminate such reasons as numbers 1, 2, 4 and 5, as well as to materially reduce the possibility of the other items causing spoilage.

The United States census report places the spoilage due to poor artificial lighting at \$28,125,000 per year, which perhaps, with the extreme industrial activity of today, is much lower than the actual value. It may be safely assumed, from data available, that in the average factory the saving from this item alone will be sufficient to pay the difference between good lighting and bad.

The problem of reducing the labor turnover is receiving considerable attention at this time, it having been found that truly phenomenal savings may be effected in this direction.

The reduction and elimination of eye strain, together with better working conditions, such as order and neatness in the shop, which follow the installation of adequate lighting equipment, is sure to promote a feeling of greater contentment among the workmen which will inevitably make itself felt in reducing the number of men who voluntarily give up their employment.

When all of the contributory factors are considered, it becomes immediately evident that providing good lighting is a paying investment from a purely monetary standpoint as well as a duty which the employer owes to his employees.

The importance of the lighting system from the standpoint of accident prevention is emphasized by the fact that in Pennsylvania and New Jersey laws have already been passed requiring that lighting must reach a certain standard of excellence, while New York, Wisconsin and Ohio are at this time considering the adoption of a code of lighting for factories, mills and other work places.

Mammoth Irrigation Canal Proposed for Louisiana.

Baton Rouge, La., July 14.—[Special.]—A project for the construction of an irrigation canal, starting at a point on the Atchafalaya River near Simmesport or Melville, La., and traversing the entire rice district of Southwest Louisiana, with a system of laterals, has been launched in this State.

A delegation composed of some of the most influential citizens of Louisiana will go to Washington this month for the purpose of enlisting the aid of the Federal Government in the undertaking.

The plan is to ask the Federal Government to issue 50-year bonds to defray the cost of constructing the canal, the Government to reimburse itself by imposing a production tax on all rice farms irrigated by water from the canal. The estimated cost of the canal is between \$12,000,000 and \$15,000,000.

If the attempt to enlist the support of the Federal Government fails, the plan is to ask the Louisiana Legislature, at the regular session in May, 1918, to submit an amendment to the constitution to the people authorizing the State to issue bonds for digging and operating the canal.

The disastrous drouth that exists in the Louisiana rice district caused the launching of the plan for constructing an irrigation canal that would be an insurance against any crop failures in the rice belt.

The canal would not only irrigate the rice farms, but it would serve for transportation purposes. The main canal would have connections with Bayou Teche and the Calcasieu, Vermilion and Mermentau rivers, and also with the intercoastal canal.

The canal would be the biggest irrigation proposition on the continent. After cutting through a range of hills in St. Landry parish, the water would travel through the rice district by natural flow of gravity.

Fire and Explosive Hazards in the Oklahoma Oil Fields

By EARL T. NOLAND, Student in Fire Protection, University of Oklahoma.

The very nature of the oil and gas industry presupposes extensive hazards with respect to fire and explosion.

It seems to be impossible to remove a great many of the hazards to a point of safety such as would be expected in the workings of most modern industries. This is because oil and gas development is commonly a matter of much hurry and uncertain prospects, comparable to the rush that accompanies gold mining. New fields are developed so rapidly that only the most simple ideas of fire protection are carried out. The oil man in a new field feels that he must use that which will most conveniently serve his purpose, regardless of the hazard.

Crude oil as it comes from the ground is very inflammable. Its specific gravity varies with the section from which it comes, and natural gas nearly always accompanies it. Natural gas is colorless, but has a distinctive odor, is highly inflammable and very explosive when mixed with air.

Deep well drilling for oil and gas has its special hazards. To begin with, the boiler used generally has a very open fire box, and is liable to start a grass fire, which is often the case. Next are the open torches for illuminating purposes. These are perhaps not to be considered especially dangerous. The forge, which in most cases is within the derrick, is well under control at all times except when a large gas pocket is struck. At such times, if the forge fire is not quickly extinguished, fire will start and in the course of a few minutes the whole rig and the tools will be aflame. When much gas is struck it is the usual practice to remove the boiler some distance as a safeguard against fires. This plan works very nicely for the small-volume wells, or when the wind is in the right direction. There have been many cases, however, when the wind has changed so quickly as to prevent shutting down, and enormous fires have been the result.

When oil is found in paying quantities, a charge of nitroglycerine is exploded in the sand to create a reservoir pocket. Being a very unstable product and highly explosive, nitroglycerine has its special hazards. It usually is stored in out-of-the-way places in metal magazines. The land around is posted with warning notices as to hunting with firearms and as to fires. Torpedo wagons transport the nitroglycerine from the magazines to the wells where it is used. The substance is so unstable that it often explodes upon the slightest jar or atmospheric change. Repeated explosions have occurred in which magazines, men, horses and wagons have been blown to bits smaller than a man's fist. Every precaution is taken in safeguarding life and property, but it is, in most cases, impossible to get competent "shooters" that are not reckless.

If the well does not flow before the shot, it is very likely to do so immediately afterward. A great deal of the flowing oil necessarily escapes and covers the surrounding grass, brush, etc. These all form a combination of materials that will burn terrifically when once it catches fire.

Commonly the oil is first stored upon the lease in wooden stock tanks varying in size from 100 to 1000 barrels. The most commonly used are the 250-barrel tanks. However, when big wells are struck and there is a larger flow than can be immediately taken care of, open earthen tanks are often brought into use. They serve the purpose, but should be dispensed with as soon as possible.

Choice of a location for stock tanks upon the lease is generally a "happen-so" arrangement, though lately more attention has been directed toward their proper location. Natural drainage is an important feature. Their location should be planned so that a fire coming up the water course of the stream, due to floating oil, cannot easily get to the tanks. Where long ditches have to be dug to get to a natural ravine, the cut should be deep and wide enough to carry the maximum amount of refuse without overflowing.

Wooden tanks have a decking over the top made of ship lap. The principal reason for this has been to prevent vaporization of the oil, but superintendents are beginning to see the value of it as a fire preventive in re-

taining the gas. An improvement on the ship-lap decking is to cover the ship lap with a close cover of tar paper.

It has long been the custom to plow fire guards to prevent the fire from reaching the grass, but these have oftentimes proved ineffective, due to the fact that weeds grow up in the plowed ground and subsequently die and will burn as well as the grass. Recent investigation has shown that skinning the top of the ground off, removing the grass and brush for some 16 or 20 feet from around the tankhouse are good checks for prairie fires.

In days gone by leases were junk piles; one after another, oily brush, weeds, grass and trash were scattered over the whole. Today the idea of "good housekeeping," cleaning up and making the lease look more like a modern farm has reduced fires to a great extent.

The transportation of crude oil is carried on in two ways. The principal one is through pipe lines from the leases to pump stations and from the pump stations to the refineries. The pipe line companies have put fire protection on a comparatively scientific basis in their pump stations and tank farms. Pressure gauges show immediately if a break or leak of considerable size occurs. Using electric-lighting systems also reduces the chances of fire to a great extent. By their private telegraph lines the pipe line companies can also bring aid in case of fire.

The steel tanks on a tank farm are all earth-diked to hold the burning oil, and should the tank catch fire, huge suction pumps are ready to take the oil out underneath, as the hot oil would boil over otherwise. The farms of tanks are fenced and posted with prominent signs of warning. A cannon is usually kept to shoot the tanks and release the oil should there be danger of a tank exploding and spreading the fire. In addition to this, there are always night watchmen on duty. The result is that there are very few tank-farm fires otherwise than those from lightning striking, for which no prevention has been worked out as yet.

Much oil is transported by railway tank cars. Fires are frequent among them, due to several causes. First, leaking cars are apt to be set on fire by a spark from the locomotive. Second, empty oil cars are commonly full of gas mixed with air, and if an escapement or relief valve permits the mixture to issue and this comes in contact with a flame, there is a terrific explosion. Often, too, there is much oil spilled carelessly about the loading racks which might well be avoided.

Refineries are often the scenes of serious fires. They have all of the tank-farm hazards and a number of special ones. As a prime factor they use extensively and keep on hand large supplies of acids, prominent among which is sulphuric. In the distillation process the oil is heated to high temperatures, making it very much more inflammable than when cold. The lighter by-products, such as gasoline, benzine and kerosene, are likewise much easier to take fire than is the crude oil. The refineries have long practiced the art of fire protection in a systematic way, and most of them have extensive apparatus for fighting fire.

As there is no practical means of putting out oil fires, the main thing is to prevent them and restrict them to the smallest possible area should they start.

On the whole, perhaps it may be said that failure of oil men to recognize the value of practicing fire protection has been due to their mad rush for wealth. They have not felt that they have had time to plan protection devices. Day by day oil men are awakening to the sense of needless losses and taking steps to prevent the costly oil fires which have consumed so many millions of dollars in the past.

Georgia's Bauxite and Fuller's Earth.

A report on bauxite and fuller's earth of the coastal plain of Georgia has just been issued by the Georgia State Geological Department. It was prepared by Mr. H. K. Shearer, assistant State geologist, contains 340 pages of printed matter and a large number of half-tone illustrations, together with a geologic map of the

coastal plain, showing the location of the individual deposits of bauxite and fuller's earth.

The geologic formation of the coastal plain is discussed in the introduction, while Part I describes the mode of occurrence of bauxite, its distribution, physical and chemical characteristics, method of mining, preparation, uses, etc.

Part II treats of the occurrence and distribution of the fuller's earth deposits of the region, description of individual deposits, methods of mining, uses, etc.

The issuing of this report at the present time is quite important, as there is now an unusual demand for both bauxite and fuller's earth. The former, when made into aluminum, has an extensive use in time of war in the manufacture of automobiles, aeroplanes, motorboats and all classes of camp equipment. As an alloy with copper it is used in manufacturing cartridges for rifles, shells, helmets, grenades, and with soft iron in making shell fuses. Aluminum dust with ammonium nitrate produces an explosive called "ammonal," which has the advantage of being insensitive, stable, and of remaining in perfect condition for a long period.

Domestic fuller's earth, mainly from Georgia and Florida, is now largely replacing the English fuller's earth, which previous to the war was imported into this country for the refinement of cottonseed and petroleum oils.

Copies of this report can be secured from Prof. S. W. McCallie, State geologist, Atlanta, by payment of 15 cents postage.

The Peanut as a Food Product Gaining in Favor.

The peanut as a food product is rapidly becoming more widely appreciated in this country, and has reached an important place in the dietary, especially with the working classes, in the form of peanut butter. The value of peanut butter, as explained by officials of the Food Administration, lies in its nutritive feature. Its composition on the average runs about as follows: Protein, 26 per cent.; fat, 39 per cent., and carbohydrates, 24 per cent. The total calories per pound amount to 2560.

The growing favor of the peanut as a food product has considerably stimulated the raising of peanuts. In 1890 the peanut acreage of the country was only 516,654. In 1909 this increased to 869,887. In 1916 the acreage was further increased to 1,245,000, while for 1917 it is estimated that over 2,000,000 acres will be devoted to peanut growing. An important feature of the peanut crop, from the standpoint of the Food Administration, is that it is a crop of which the production may be stimulated to any extent without any undesirable after-results in the disposal of the product. The reason for this is twofold.

In the first place, the peanut crop is very largely and increasingly used as a means of fattening hogs. The hogs are turned into the field, and eat both the peanuts and forage, so that they operate both as harvesters and converters of the product into meat.

In the second place, the use of peanut butter as human food is increasing, and can be stimulated by production to a larger extent than at present. The crop is easily stored.

In connection with these facts regarding the peanut, the Food Administration investigated the prices at which peanut butter was being sold at retail in Washington, and startling differences were found. The retail prices of six brands were used in making the comparison, and the lowest sold at 15 cents per pound and the highest at 46 cents per pound, or more than three times as much. Inasmuch as the quality of peanut butter and its nutritive value varies little, the facts developed by this investigation are considered remarkable, in that one company could sell its product at a price more than three times greater than another company. The only reason that was given as to the wide range in prices was that the brand name and reputation of certain manufacturers are used as a means of increasing the price of the product to an unwarranted degree.

But even with peanut butter selling at 45 cents per pound, it is shown that consumers can purchase more protein and fat in the form of peanut butter than in almost any if not any other palatable food now on the market.

CHEESE-MAKING INDUSTRY WELL ESTABLISHED SOUTH.

Following Lead of North Carolina, Other Southern States Have Joined Important Move—In Mountain Section Ideal Conditions Are Found.

Raleigh, N. C., July 13—[Special.]—North Carolina has the distinction of being the first State south of Pennsylvania to manufacture commercial cheese, and it is found to be fully equal to the best English Cheddar and also superior to that shipped here from the North and the West.

It was in the early spring of 1913 that Mr. Alvin J. Reid, the expert in charge of the dairy field office at West Raleigh, went into the high mountain region of Ashe county, traveling in a team, and showed the people how to make real cheese. They did not believe he could make what they called "store cheese."

On the fifth day of June, 1915, at Sugar Grove Post-office, on Cove Creek, eight miles from Boone, Watauga county, the first factory began business. In the co-operative company there were 30 farmers, and it is interesting to know that all of these are still in the company except two, who were expelled for skimming milk they furnished. They were caught at this, promptly dismissed from the corporation and chased out of the neighborhood.

That first year, 1915, the plant, which was only expected to run on surplus milk during the pasture season, ran two months later and did not close until December 31. It made enough money to pay for the cost of the plant, pay the cheese-maker, who got a cent and a half per pound, and pay for the milk, a gallon making, say, a pound. The first year's business amounted to \$1700.

In 1916 the plant, doubled in size, ran from April continuously, and has never stopped since. The business in 1916 amounted to \$7000. This year it will be twice that sum, at least. It is found that it costs four cents a pound to manufacture the cheese, and all the rest of the money goes to the patron. This cost covers the plant and its overhead charges, including labor, package, etc. When cheese brings 20 cents a pound, the farmer therefore gets about 16 cents a gallon for his milk. Of course, the price of cheese regulates this matter. There are many patrons who are not stockholders.

A direct effect of the cheese factories here, which have rapidly followed one another, is a great increase in cows—four times as many, in fact.

It has been stated as a positive fact that the average cheese from this factory and others in high mountain North Carolina is better than the cheese from the North and West, which comes South. The extremely high altitude, the cold springs, which keep the milk cool over night, the remarkable absence of dust, the absence of swamps and mudholes in pastures and the fact that ice is not necessary and is not used at all are the big factors. The cold springs and the elevation make the mountain districts of the South especially suitable location for cheese-making. The elevation of the Sugar Grove factory is 2000 feet above sea level, and that is something like the average in all that region.

There were seven factories complete in the late autumn of 1916, and of these, four ran all that winter and have been running continuously ever since. There are now 20 of the plants—in Alleghany, Ashe, Avery, Buncombe, Madison, Watauga and Yancey counties. The one at Sugar Grove is the largest of all, and the cheese from it goes to Roanoke, Norfolk, Atlanta and Asheville mainly. A new plant at Twin Oaks, in Alleghany, has a special story, for that county never had an industrial plant except a grist mill until that time. It is near Sparta, and the people there got so full of the cheese-factory spirit that they sent a strong delegation to Grassy Creek, in Ashe county, last autumn to see the second cheese factory which was established. The report settled things, and such live men as Rufus Doughton, the sheriff of the county, the cashier of the bank and other leading spirits went in, built the plant and it opened for business April 25 last with a 200-gallon vat. In less than a month the company had to put in a 500-gallon vat, and ever since the outturn of cheese has amounted to \$1000 a month. The first 400 pounds made was put into an automobile and taken to Winston-Salem, where it made such a hit that a big grocery house contracted for the total output of this factory.

Watauga county, the pioneer cheese-making region in the South, has had a powerful influence in this line, and now there are in that county seven other plants, all co-operative, one being at the Valle Crucis industrial school, an important point.

First Virginia, next Tennessee and now West Virginia have followed North Carolina in cheese manufacture and these States have put in special cheese experts, Virginia and Tennessee having each six plants in operation and West Virginia two just starting. Georgia will put in a cheese expert next.

The Iron Market—Decrease in Supply and Increase in Demand.

In their weekly iron market report of July 14, Matthew Addy & Co. of Cincinnati make the following statements in regard to a steady decrease in production and to heavy increase in consumptive requirements:

"Furnace yards have no iron on them. The country has no surplus supply of iron—we are running absolutely on a hand-to-mouth basis. And the shortage of iron grows. More is demanded than can be supplied. Every mail brings clamorous letters asking for heavier shipments—demand for far more than can be furnished. Meanwhile, owing to coke shortages and various troubles, the general output of iron is declining. Less iron was made in May than in April, less in June than in May, and July's record apparently will be farther down the hill. It is a situation for which there is no immediate remedy. As far as we can judge, things will grow worse instead of better.

"There is naturally at the unprecedented prices now prevailing much discussion as to whether to buy or not to buy. The president of one of the largest iron-making companies in the South emphatically believes that the consumer of iron will be better off if he contracts now for 1918 than if he waits. His opinion is that the iron user in this way will insure himself. On the other hand, there are men of equally good judgment who believe it is foolish to make forward contracts now; that if the market declines, such contracts will spell ruin, and if it advances, the consumers can well afford to pay the advance rather than to take the chance of purchasing today. No matter whether the consumer does or does not, he has a tremendous responsibility. But sales continue to be made right along for 1918. And it is a fact that more than two-thirds of all the iron that can be produced in the first six months of 1918 is already under contract.

"Buying this week has not been as heavy as usual. The suggestion of a possible Government regulation of prices probably had something to do with this, but, on the other hand, furnaces are so loaded down with orders that they are not in the least interested in trying to sell anything."

The MANUFACTURERS RECORD is officially advised that \$52.50 has been offered in Birmingham for iron for delivery during the last half of 1918.

Lumber Industry Active in Mississippi.

Jackson, Miss., July 14—[Special.]—Developments in the lumber industry in Mississippi for the past week were many and varied, and the most active week of the summer was reported.

A large tract of hardwood timber six miles southeast of Laurel was purchased by the Lowery Lumber Co., to be opened up at once. Timber for shipbuilding will be the specialty of the new concern. The timber is on the proposed railway from Laurel to Pascagoula, and lies near the Gulf, Mobile & Northern. It is virgin timber.

The Atley-Holloway Company of Chicago paid \$100,000 for the timber on 13,000 acres of land near Clayton, 20 miles from Natchez. A band mill will cut the hardwoods in the tract.

The Horse Creek Lumber Co. was organized at Corinth, with Hubert Young of Corinth and C. J. Harris and George R. Hogg of St. Louis as owners. Timber has been bought up, and saw and planing mills will be operated.

The Jonesville Lumber & Veneer Co. was organized to build a \$25,000 veneer mill and employ 100 men. The officers are A. W. Stewart, president; B. F. Lewis,

vice-president; J. N. Warner, secretary; J. W. Lewis, treasurer and general manager.

The Butterfield Lumber Co. is completing a 40,000-foot mill near Roxie.

The Columbus Lumber Co. is running night and day supplying Government orders.

Government contracts and the shipbuilding industry on the coast are having a very beneficial effect on the industry. Commercial demand is still good, but car shortage prevents deliveries.

"On His Own Threshold."

[Houston (Tex.) Post.]

In 1852 a Maryland statesman wrote a book. With farsighted vision he looked into the future and saw the war of today. In that book, as quoted by the MANUFACTURERS RECORD, Henry Winter Davis said:

England must either be the accomplice, the victim or the conqueror of the allied despots.

Across the Atlantic there is another people allied in blood, in institutions and in character, which must share the fate of England.

I maintain it to be the dictate of high policy, whenever the battle shall be joined in earnest in that final conflict between freedom and despotism, which is unavoidable and may not be remote, to display the banner of the republic in the cause of the rights of nations and of man, for our own defense.

If, therefore, it be possible so to aid the cause of European freedom that it may be crowned with success and grasp the scepter of rule—it is the plainest dictate of sound policy, quite level to the comprehension of common sense, to let no opportunity slip, effectually, earnestly, boldly, at whatever expenses of men or money, to secure its triumph as the best and only safe defense of our security.

Though the stars and stripes float on a thousand fields in Europe, we shall incur no more hate, no more danger, no greater certainty of that "tremendous combination," than now hang over us as the inevitable consequence of the final triumph of despotism in Europe.

The policy of indifference is the only fatal one; the leaving our own to stand on foreign ground is merely meeting the invader at his own threshold—and it is our only safety.

That was written in 1852. Yet no man of 1917 has been able to express in words so true the conditions which confront us today.

"The policy of indifference is the only fatal one," and our only safety is in carrying the conflict to the very doors of the enemy.

North Carolina Leads in Feldspar Production.

The production of feldspar in the United States in 1916, as reported to the United States Geological Survey, was 118,465 long tons, having a value as crude material f. o. b. mines of \$404,689. Of this amount, 75,165 long tons entered the market as crude feldspar, valued at \$251,372, and 48,496 short tons were ground by the producers and sold for \$450,906. During the year the price of crude spar averaged about \$3 per long ton and of ground spar about \$9.30. Feldspar was mined in the following States, named in order of quantity produced by each: North Carolina, Maine, Maryland, New York, Connecticut, Pennsylvania, Georgia, Virginia, California, New Hampshire, Vermont. The output came chiefly from 50 quarries, but a like number of small or intermittently worked deposits contributed materially to the total.

Feldspar is used mostly in the pottery and enameling industries, which consumed 82 per cent. of the year's output. Probably less than 1, 2 and 3 per cent., respectively, of the total output were used for chicken grits, soap and other abrasive purposes, and in making glass. Roofing and cement surfacing consumed about 7 per cent., and an equal proportion was used in preparing fertilizers and in the experimental extraction of potash.

Bridge Bonds Voted for \$950,000.

Last week's election at Jacksonville, Fla., to vote on issuing \$950,000 bonds for constructing a bridge across the St. John's River resulted affirmatively. These bonds are to be issued by Duval county, the commissioners of which will arrange to dispose of the bonds preparatory to building the bridge. This will be a steel and concrete structure, with wagon and foot ways. It will connect Jacksonville viaduct with the center of the business section.

TO PRODUCE CELLULOSE FROM PLANTS OF MANY VARIETIES.

Claims Made to Discovery of Process for Utilization of Waste Vegetation and Wild Growths.

Announcement is made by T. L. Stewart, Murrysville, Pa., that the American Cellulose & Textile Fiber Co. has been organized to manufacture "paper pulp of different sorts, spinning fibers, coarse or fine, and for twines and cordage, and certain new forms of cellulose in particular, which practical demonstrations of their efficiency made more than a year ago, showed what their value is for the production of high explosives."

It is proposed to set up and put in operation as quickly as possible, for public demonstration only, two small plants, each using two or three units of the machinery regularly employed in the work. These are to be located at or near Norfolk, Va., and Miami, Fla., where it is proposed later on to also erect large central factories. In these locations will be concentrated the business of two selected districts, namely, the tier of Gulf States extending from Florida to Louisiana, inclusive, and to the Atlantic Coast States and Tidewater border, extending from New York to Georgia.

During the past two years Mr. Stewart has contributed articles to the MANUFACTURERS RECORD describing the progress made toward perfecting a new system for the utilization of waste vegetation, wild growths of marshes and tidewater districts, etc., in the manufacture of pulp and other forms of cellulose. About two years ago Mr. Stewart announced that "a new process of producing paper pulp" had been discovered, "whereby the whole of the true cellulose and fibrous matter that enters into the composition of the vegetable structure can readily and regularly be isolated and separated out in a perfectly pure condition, under any circumstances, at a very low cost. As a result of years of research and experimental work, it is evident that a new system of treatment has been developed by which long, coarse fibers and finer filaments found in a great variety of plants from which textile fibers had never been obtained before can be made to yield them in abundance; some of them of an equal grade and some of a higher grade than those from flax and cotton."

An open letter which Mr. Stewart has written outlines his plans and presents his claims to the discovery of a new process of incalculable importance.

CUTTING COST OF MOTOR FUEL.

Remarkable Results Claimed for Invention of New Carburetor.

Milwaukee, Wis., July 14—[Special.]—The high cost of gasoline problem has been solved as far as the motorist is concerned by the invention of the turbo-carburetor, according to the manager of the company. With this carburetor it is possible to use five gallons of kerosene and one gallon of commercial gasoline.

The carburetor produces, with fuel only one-fifth of which is gasoline, and low-grade gasoline at that, results equal to those produced with high-grade pure gasoline.

In experiments conducted at a factory where a well-known motor is made this carburetor developed 51 horse-power at 1200 revolutions per minute, while one of the best known of the other makes of carburetor developed 44 horse-power. Using pure kerosene, the turbo developed 46 brake horse-power, and using pure gasoline, 448.

The use of pure kerosene is not practicable except in the case of tractors. With pleasure cars the largest percentage of kerosene that can be used with good results is 90.

WARREN B. BULLOCK.

SHOE SOLES OF WOOD.

Wagon Maker of Wisconsin Evolves New Method of Meeting Leather Scarcity.

Milwaukee, Wis., July 14—[Special.]—The manufacture of wooden soles for shoes is the result of the present cry of "no waste." The MacKinnon Manufacturing Co. of Grand Rapids, Wis., who formerly

made only wagon hubs, farm and freight wagons, originated the idea of making soles from those pieces of Wisconsin yellow birch not suited for making hubs and spokes.

These blocks, which are from the best logs, were formerly sold for firewood, but the manufacturers saw in them the possibility of saving for the nation and a greater utility for wood.

Yellow birch, of which there is an unlimited supply in Wisconsin, has been found to be a most satisfactory wood for making soles, as it requires a very hard wood that does not warp and that dries quickly. Blocks about 13 inches long are cut from logs unsuited to any



SHOES WITH WOODEN SOLES.

other purpose. The blocks are then made into two-inch planks and allowed to dry in the air for several weeks. Then they are taken in and band-sawed, first to get the original shape of the sole, and later resawed to form the groove on the top of the sole. This is all done by previously marking off the plank from a metal pattern. The plank is cut according to the different sizes of soles. These sizes range from 6 inches to 12 inches long, and in width proportionately.

These soles are then sanded on a sanding machine and later the bead is cut around the top of the soles to allow leather to be set on to the wood and a band of metal is put over the top of the leather on the sole to make it stronger as well as waterproof.

The finished shoe resembles an overshoe, and is especially suited to those working in wet places, such as creameries and butter factories. By putting metal strips on the bottom these shoes are found to be especially durable for use in foundries and machine shops or in any place where the shoe comes in contact with molten metal.

The output is from 150 to 200 soles a day, with 8 or 16 men employed.

What Children Are Studying.

Life is blossoming out in rural Denmark—blossoming in the sunshine of such favorable educational influence. The question is whether life is blossoming out under the educational practices now in force here in the South. Take the rural high schools of one Southern State, using North Carolina as an example, since that is the only State from which we have been able to obtain figures, and what are the children studying? According to the latest reports, 6967 are studying Latin and only 630 are studying agriculture—and this in country high schools! Of the 45 subjects listed, more boys and girls are studying Latin than any other one subject—more are studying Latin than are studying the literature of their own tongue! More than ten times as many farm boys and girls are studying Latin as are studying agriculture, the work to which most of them will give their future, or as are studying physiology, the science of keeping their own bodies in health! A subject like economics is taught only to 40 and music and singing enlist less than 400, while nearly 7000 conjugate Latin verbs and parse Latin sentences with no prospect of ever going far enough with Latin to get any real culture from its literature.

In the joyous, buoyant life of rural Denmark we have one picture—a picture of life blossoming and bearing fruit under a high-school system that "sheds light on daily life" and emphasizes social features—lectures, debates, singing, athletics! In our high schools children are poring over Latin books and going back to work disheartened because the schools "repressed their noble rage and froze the genial current of the soul."—The Progressive farmer.

Railroads Welcome Water Transportation.

Mr. Fairfax Harrison of the American Railway Association Special Committee on National Defense, has set forth the position of the railroads of the country regarding commercial transportation on the navigable waters of the United States in a letter to Gen. William B. Black, chief of engineers, United States army. He states that the railroads are prepared for cordial co-operation. The letter is as follows:

"Referring to the conference held in the office of Mr. Daniel Willard, chairman of the advisory commission, Council of National Defense, in Washington on the 12th inst., between the committee of the Council of National Defense on inland water transportation and this committee:

"In order that the position of the railroads regarding commercial transportation on the navigable waters of the United States may be clearly understood, at your request this committee now repeats in writing the statements made at this meeting, viz.: That the railroads will welcome any practicable water transportation and are prepared to co-operate cordially with responsible persons or corporations who may provide such water transportations, by the exchange of traffic, the assurance of joint through bills of lading, and, if necessary, where conditions justify it, by joining the water carriers in the building of tracks to connect the railroads with the wharves and landing of water carriers."

South Produces 98 Per Cent. of Our Fuller's Earth.

Fuller's earth was marketed in six States in 1916—Arkansas, California, Florida, Georgia, Massachusetts and Texas. The South produces nearly all our fuller's earth, 98 per cent. coming from that region.

The fuller's earth industry, according to the United States Geological Survey, showed considerable progress in 1916, the product marketed being the largest, in both quantity and value, ever reported. The quantity of domestic fuller's earth marketed in the United States in 1916 was 67,822 short tons, valued at \$706,951, or at \$10.42 a ton at the mine. This was an increase of 19,921 tons, or 42 per cent in quantity, and \$217,732, or 45 per cent. over 1915, in value. The average price per ton was 21 cents higher in 1916 than in 1915.

City Bonds Voted for \$1,042,500.

The city of Tulsa, Okla., has voted its proposed issuance of bonds to the amount of \$1,042,500, the proceeds to be expended for necessary municipal improvements. These betterments are outlined as follows: \$660,000 for water-works extensions and improvements, including water belt line around business sections of Tulsa proper, ample water facilities for West Tulsa and improvements at Kendall; \$80,000 for constructing sanitary and storm sewers in West Tulsa, Kendall and other additions; \$40,000 for constructing heavy traffic roadway; \$35,000 to enlarge fire-alarm system, installing alarm boxes in business and residential sections, and complete system in West Tulsa and Kendall; \$30,000 for city's share of cost of constructing subways and viaducts.

Drainage System Costing \$684,684.

Contract has been awarded for constructing the drainage system planned by the Supervisors of Lake Worth Drainage District, F. E. Encell, secretary, West Palm Beach, Fla. This system is estimated to cost \$684,684, and will be located within a district comprising 132,000 acres, which will be reclaimed mainly for agricultural development. The work will include removing 7,205,000 cubic yards of earth and 180,900 cubic yards of solid rock. It calls for the construction of canals, locks, dams and bridges. A. V. Wills & Sons of St. Louis and James T. McCarthy of Gainesville, Fla., are the contractors, and they have agreed to complete the system in five years on a basis of cost plus 15 per cent. They also accept bonds from the \$1,029,000 bond issue authorized in connection with this system.

Lull in Iron Buying—Lower Price in Scrap Market.

Birmingham, Ala., July 16—[Special.]—A little lull in the buying of pig-iron in the South is appreciated more than feared. Though the buying is not as brisk as it has been, even inquiries quieting down some, there is no inclination on the part of the manufacturers to induce business to come in by offering concessions on prices. The schedule of \$48 per ton No. 2 foundry, delivery next year, is being maintained, while what little iron can be offered for immediate or this year delivery still commands \$50 per ton. A small lot of low-silicon iron sold recently above \$51 per ton, while special brand and special analysis irons can bring above \$50 easily if there can be any delivery during the balance of this year. The lull in the buying is said to be the result of an expectation that the Government's action will fix a price lower than at present. There are indications that a large quantity of iron will be needed for many months to come, and the prediction is made that there will be an active market through all of 1918, and even longer. Some improvement in production is noted, one furnace having been blown in this month and another about to resume operations after some repairing. During next month the Birmingham-Trussville Iron Co. has hopes of getting its Trussville furnace in operation, a large force of men now being at work on the rehabilitation of the plant. E. A. and C. C. Shedd, the Chicago capitalists, the first named being at the head of this concern, have been in the Birmingham district for the past few days inspecting the plants and looking over other matters. Work will be started shortly on the rehabilitation of the furnace plant of the Sheffield Coal & Iron Co. at Sheffield, Ala., James Gayley, president, having made arrangements in the East for a resumption of activities. W. L. Klutz, formerly with the Republic and Tennessee companies in the Birmingham district, and more recently with the Central Iron & Coal Co. at Holt, in Tuscaloosa county, is to be general manager of the concern. He is an iron man of ability, and will demonstrate it in his work in the Sheffield territory. Other development of furnace properties in Alabama is under consideration, while the old companies are getting the maximum production at their blast furnaces.

Pig-iron and steel manufacturers in Alabama are still waiting patiently on the Government as to its needs and a general regulation of the iron and steel markets. Reiteration of the intent to be loyal and patriotic is heard, and every attention will be given to the business when it is distributed. Many of the older contracts for pig-iron in the Birmingham district are beginning to wane, and it is estimated that by the last of this month there will be but little of the business taken on under \$18 per ton No. 2 foundry still on hand. Delivery is still good, better than prevailed a year ago by considerable, and somewhat better than it was six months ago. As a consequence of the steady delivery there is a decline in the stocks on hand, and it will not be long before the furnace and warrant yards in this section will be showing indications of being barren. The accumulated stock of iron at present is way below that which has been noted in this district.

The Kilby Frog & Switch Co. has let the contract for an addition to its plant at North Birmingham, the enlarged plant to be of steel and brick. Demand for products of this concern is steady, and prospects exceedingly bright.

Coal and coke production in Alabama is very strong, but could be better if labor worked steadier. High wages apparently does not encourage a large proportion of the labor in the coal mines to keep as busy as possible. Some apprehension is still expressed as to action to be taken at the convention of the United Mine Workers of America, Alabama district organization, to be held in Birmingham this month, recognition of the union to be asked of the operators. The operators reiterate the statement that the mines will be worked on the open-shop plan, and that no dealings will be held with unions. A strike for one week or more would cripple some of the industries of the district. The coke production is meeting needs of the district. Inquiries are still being received for coko, with but little accommodation being offered by producers.

The railroads of the Birmingham district have given notice that, effective this week, there will be an advance of five cents per ton on preferential rates on raw material for furnace production. This will mean an additional cost of iron manufacture. Some protest is to be made against the new rate. The State Public Service

Commission will hardly take a hand, inasmuch as the additional rate will not reach the maximum that is allowed.

Cast-iron pipe, soil pipe and fittings plants, foundries and machine shops and other industries of the kind in the Birmingham district are working to capacities. Specifications for water pipe are reported every now and then, despite recent advances in prices. Soil pipe and fittings, sanitary pipings, are in good demand, the Government to need quantities of this product for the can-tonments that will be constructed throughout the country. Foundries and machine shops, in addition to the Government business heretofore reported, have been receiving considerable domestic business.

The old-material market began tumbling the past week, and quotations suffered reductions from \$1 to \$3 on various products. Reports have been coming in from other centers to the effect of a dropping market, but for a week or two strength was maintained here. Then of a sudden there was a break here, and prices are changing almost daily. A general revising of the quotations has been noted.

Pig-iron and old-material quotations in the South are given as follows:

No. 1 foundry and soft.....	\$48.50 to \$50.00
No. 2 foundry and soft.....	48.00 to 50.00
No. 3 foundry.....	47.50 to 48.00
No. 4 foundry.....	47.00 to 47.50
Gray forge.....	46.00 to 47.00
Charcoal.....	55.00 to 60.00
Basic.....	48.00 to 50.00

OLD MATERIAL.

Old steel axes.....	\$35.00 to \$36.00
Old steel rails.....	27.00 to 28.00
No. 1 wrought.....	30.00 to 31.00
Heavy melting steel.....	21.00 to 22.00
No. 1 machinery.....	26.00 to 27.00
Car wheels.....	26.00 to 27.00
Tramcar wheels.....	25.00 to 26.00
Stove plate.....	17.50 to 18.00
Shop turnings.....	12.00 to 13.00

\$8,000,000 Coal-Mining Organization.

A large new mining organization for West Virginia developments is the Pocahontas-Logan Coal Co. of Huntington, W. Va., which has been incorporated with an \$8,000,000 capitalization by Wm. E. Deegans, president of the American Banking & Trust Co. of Huntington and associates. This company consolidates eleven Logan county coal companies, having a combined capitalization of \$5,000,000 and a monthly production of 100,000 tons of coal. The properties are located in the Guyan Valley, Norfolk & Western and Big Sandy coal fields and on the main line of the Chesapeake & Ohio Railway. Ten thousand acres of coal land are included with the various mining plants. The Alene, Slab Fork, Orville, Albert, New Pocahontas, Pocahontas Smokeless, Guyan Valley, Deegans-Eagle and Faulkner coal corporations, Paragon Collieries Co. and Franklin Mining Co. are the eleven companies referred to. Mr. Deegans will be the president and general manager of the new company, and his associates are O. C. Huffman, L. N. Frentz, John Huffmeier, O. J. Deegans and John Faulkner.

For 1000 Tons Daily Output.

Sixteen hundred acres of West Virginia coal land on the Piney Creek extension of the Virginian Railway and on the Chesapeake & Ohio Railway will be developed by the Hines Collieries Co. of Princeton, W. Va. This company was mentioned last week as chartered with a capitalization of \$250,000, and it has organized with the following officers: H. E. Hines, president, general manager and engineer; T. M. Beckwith, vice-president; T. M. Fry, secretary-treasurer. It is planned to provide for a daily output of 1000 tons of coal, and bids for mining equipment will soon be opened.

Road Machinery Wanted in Cuba.

RODOLFO HUBER, Compostela 90-92 Ant., Havana, Cuba.

Send me names of firms which make oil of turpentine and able to deliver promptly large quantities. Also interested in essence of turpentine (aguarras) or oil of turpentine (aguarras) for making a commercial oil of turpentine (aguarras) in imitation of oil of pine. Also road-leveling machines of certain weights, new or second-hand, for quick delivery.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

PUBLIC SERVICE COMPANIES MERGED.

McMillin Combination at San Antonio May Build Interurban Railways.

The San Antonio Public Service Co., capital stock \$4,700,000, of which \$100,000 is paid in, has been chartered in Texas with headquarters at San Antonio to build and operate electric railways and to conduct electric light and power and gas business. Emerson McMillan, the president, 120 Broadway, New York, says in a dispatch to the MANUFACTURERS RECORD that the new company is for the consolidation of two old companies and one new company.

The charter authorizes the company to build electric railways from San Antonio to other points in Texas as well as in the city, and it is important to note in this connection that plans have been considered for some time by an organization, in which W. B. Tuttle, vice-president and general manager of the San Antonio Traction Co., one of the McMillin properties there, is interested, to build an interurban electric railway from San Antonio to Austin, about 75 miles.

It does not, however, appear that any construction is planned immediately.

The public service properties at San Antonio are the San Antonio Traction Co., with 87 miles of single track and 228 cars, and the San Antonio Gas & Electric Co., with 200 miles of gas mains and 11,101 meters and an output of 398,054,000 cubic feet of gas annually, the electricity output being 25,468,519 kilowatt-hours. Mr. McMillin is president of both. He is also chairman of the board of the American Light & Traction Co., which controls the properties at San Antonio, besides fifteen public service companies in other parts of the country.

Baltimore & Ohio Branch to Sparrows Point Steel Works.

The Baltimore & Ohio Railroad has begun construction of its extension to Sparrows Point, Md., near Baltimore, to secure a share of the traffic to and from the large steel plant there which is now owned by the Bethlehem Steel Co., and which has hitherto had rail connections with only one trunk line, the Pennsylvania Railroad.

This new industrial line, contract for which has been let to H. S. Kerbaugh, Inc., of Baltimore and New York, is to be completed this fall, if expectations are realized. It will be five miles long from a connection with the main line near Colgate Creek Station to a connection at Sparrows Point with the industrial railroad of the Bethlehem Steel Co. It will be known as the Patapsco Neck branch. The route lies altogether through nearly if not quite level tidewater country, and little grading will be necessary.

A bridge for the branch will have to be erected over Bear Creek, on the north side of the Sparrows Point property. It will be 1210 feet long, and will consist of a steel draw span 210 feet long, with timber trestle approaches of 475 feet and 525 feet, respectively. There will also be a bridge over Colgate Creek and the tracks of the electric railway that runs from Baltimore to Sparrows Point and Bay Shore Park. Two steel girders will span the railway and the adjacent boulevard, these being 71 and 80 feet long, respectively, with a timber trestle over the creek.

Central of Georgia's Annual Report.

The Central of Georgia Railway Co. has issued its annual report for the year 1916, having adopted the calendar year as its fiscal year to conform to the practice of the Interstate Commerce Commission and thus avoid needless duplication of work. The income statement shows total operating revenues \$13,725,143.69, increase as compared with 1915, \$1,470,990.98; total operating expenses \$9,281,045.50, increase \$626,577.74; net

revenues \$4,444,098.19, increase \$844,413.24; operating income after tax accruals and uncollectible revenues \$3,723,685.91, increase \$761,850.63; gross income \$5,346,988.90, increase \$960,696.63; net income \$2,649,651.47, increase \$955,527.64; balance transferred to credit of profit and loss \$2,649,651.47, increase \$2,105,527.64, dividends on both preferred and common stock amounting to \$1,150,000 having been charged to profit and loss in 1916.

A recent statement of the company shows that the total operating revenues for the first five months of 1917 were \$5,926,782, an increase of \$798,060 as compared with the same period of last year; total operating expenses \$4,337,643, increase \$610,020; operating income after taxes \$1,267,657, increase \$138,926.

The total operating revenue in May was \$1,171,474, an increase of \$192,900 over May, 1916, and the operating income was \$199,900, an increase of \$16,522.

Large Increase in Bituminous Coal Shipments.

A statement issued by the United States Geological Survey and prepared by C. E. Leshner shows that during June, 1917, there originated 186,196 carloads of bituminous coal in the district which includes Central Pennsylvania, Maryland, and the New River and the Pocahontas fields of West Virginia and Virginia (11 railroads), as compared with 174,164 carloads in June of last year. In the Eastern Kentucky and West Virginia district (excepting New River and Pocahontas fields, also 11 railroads) there were 173,728 carloads in June, 1917, and 169,176 carloads in June, 1916. In the district of Alabama, Tennessee and Georgia (5 railroads) there were 13,803 carloads in June, 1917, as against 11,652 carloads in June of last year. The district including Illinois, Indiana and Western Kentucky produced in June of this year 172,335 carloads, as compared with only 93,980 carloads in the same month of 1916. There were 750,322 carloads in all districts in the country in June, 1917, as compared with 594,531 carloads in the same month of 1916.

Savannah & Atlanta Railway.

The Savannah & Atlanta Railway Co. has completed its financial arrangements, having secured the approval of the Georgia Railroad Commission to its proposed issue of \$2,250,000 of stock and \$2,250,000 of 6 per cent. convertible first and consolidated mortgage bonds. The latter, it is said, have been underwritten by a New York syndicate, and will soon be offered to the public. The stock consists of \$1,250,000 preferred and \$1,000,000 common.

The Savannah & Atlanta Railway is now the name of the former Savannah & Northwestern Railway, running from Savannah to Camak, Ga., where it connects with the Georgia Railroad for Atlanta. The extension from St. Clair to Camak was made under the name of the Savannah & Atlanta Railway, which has now been adopted for the entire line, 145 miles long, making the route in connection with the Georgia Railroad from Atlanta to Savannah 269 miles via this route.

Merger Approved by Popular Vote.

An election held last week at Beaumont, Tex., gave the approval of the citizens to the proposed consolidation of the Beaumont Electric Light & Power Co., the Beaumont Traction Co. and the Jefferson County Traction Co. There were only 46 votes, in a total of several hundred, cast against the proposition, which, it is stated, will accomplish greater economy in operating. All the properties are controlled by Stone & Webster of Boston.

\$2,000,000 Railroad Bonds Sold.

It is announced in New York that J. P. Morgan & Co. have bought and privately resold \$2,000,000 of 5 per cent. consolidated bonds of the Nashville, Chattanooga & St. Louis Railway, which mature in 1928. These securities are of a total authorized issue of \$20,000,000, and may be issued for new lines, etc. The company, as previously reported, has plans for several small extensions.

Operating Expenses Increased Much.

Chesapeake & Ohio Railway reports for the five months ended May 31 total operating revenues \$21,407,803, increase as compared with the corresponding period of last year \$1,026,904; total operating expenses \$15,068,532, increase \$1,091,035; operating income \$5,657,950, decrease \$45,318. The total operating revenues for May were \$4,609,356, an increase over the same month of last year of \$365,589, and the operating income for the month was \$1,054,082, a decrease of \$263,518.

Western Maryland Railway reports for the five months to May 31 total operating revenues of \$5,217,370, increase as compared with the same period of last year \$685,501, but operating expenses increased \$838,922, which resulted (after taxes) in operating income \$1,245,204, a decrease of \$186,420.

New Equipment.

Atchison, Topeka & Santa Fe Railway has ordered a total of 100 locomotives from the Baldwin Locomotive Works, Philadelphia, 30 of which are of the Mikado type, to be delivered next January, and the rest from time to time during 1918. It is said that 70 of the engines will be Mikados for freight service, while the rest will be of types suitable for passenger trains.

Washington, Baltimore & Annapolis Electric Railway has bought 54 large passenger cars, which will be required for the increased service to be provided in connection with the establishment of the army cantonment near Annapolis Junction, Md.

Fort Smith & Western Railway has ordered 2 consolidation locomotives from Baldwin's.

Lumber Railroad to Be a Common Carrier.

A report from Searcy, Ark., says that local merchants have bought a half interest in the Doniphan, Kensett & Searcy Railroad, which was formerly used by the Doniphan Lumber Co. for lumbering purposes, for \$50,000, and that a new company has been formed to operate the line as a common carrier conducting both passenger and freight business and connecting with the Missouri Pacific Iron Mountain system at Kensett. C. J. Carter of Kansas City is president; E. A. Robbins of Searcy, vice-president; H. A. Kilpatrick of Doniphan, secretary, and John S. Sanford of Searcy, treasurer.

Moving Pictures and Track Inspection.

The Baltimore & Ohio Railroad reports that a recent exhibition of a moving picture made by a company of actors working on a scenario along its lines revealed the fact that a motion picture taken from the rear of a running train showed the condition of the track so accurately that places requiring the attention of the maintenance of way forces were detected by President Daniel Willard, who saw the picture in company with other Baltimore & Ohio officers. It is further remarked that it is believed that the "movie" has possibilities with regard to track inspection, although it is not expected that an inspection of the entire B. & O. system will be made through the medium of a moving-picture camera.

To Enlarge Freight Facilities.

The Pennsylvania Railroad Co. is preparing plans for an enlargement of its facilities for handling freight to and from the plant of the Bethlehem Steel Co. at Sparrows Point, near Baltimore, Md. The plans include the establishment of large freight yards on the shore of Bear Creek at the Point, and also the construction of a new line of track which will connect with the main line near Bayview, in the suburbs of Baltimore, and which for certain traffic will make a more direct route to and from the steel plant.

Railroad Will Mine Its Own Coal.

The Norfolk Southern Railroad Co., according to a report from Newbern, N. C., will supply its engines with fuel from an old mine near its line at Cummock,

N. C., which was abandoned for several years before the Norfolk Southern, in the latter part of 1913, completed its extension through to Charlotte, N. C., incidentally improving and building up the line through Cummock, which is 47 miles west of Raleigh. It is said that a great saving may be accomplished by using this coal, especially because the prices of fuel have advanced so much on account of the war.

Two Officials Appointed.

A. L. Stephens has been appointed traffic manager of the Chesapeake Steamship Co., Baltimore, to succeed A. S. Edmonds, who recently resigned to become assistant freight traffic manager of the Missouri Pacific Railway. H. R. Bowen has been appointed general passenger agent for the steamship company, a new position. He has been connected with it as traveling passenger agent.

Electric Headlights on B. & O.

The Baltimore & Ohio Railroad will equip all of its locomotives with electric headlights. It has 2500 engines, and the new headlights are being installed at the rate of 75 per month. The company's men, under the direction of J. H. Davis, electrical engineer, are doing the work.

Survey from Freeport to Houston.

The Freeport Sulphur Co., Freeport, Tex., is surveying for the construction of an interurban electric railway from Freeport to Houston, Tex., about 100 miles, via Rosenberg and other points, but there is nothing definite yet announced as to the building of the line.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Oakdale Hosiery Mill.

Two hundred dozen pairs of hose will be the daily capacity of the Oakdale (Tenn.) Hosiery Mill, mentioned last week as incorporated with \$10,000 capital by S. N. Oakley and associates. This company has awarded contract for a 100x30-foot frame building, and will install 40 knitting machines, with 20 horse-power electric drive. It has not purchased its mechanical equipment, and is prepared to consider estimates on knitting machines, dynamos, belting and shafting.

For Yarn and Finished Fabrics.

The production of cotton yarn and finished fabrics is planned by the Charleston (S. C.) Mills Co., which has been chartered with a capital of \$75,000 by Julius H. Weil and Charles D. Grost. This company has secured a suitable building and ordered its equipment of machinery.

Textile Notes.

Additions for tripling capacity will be built by the Banner Knitting Mills, Durham, N. C. This company is also reported as to build a plant at Youngsville, N. C. John D. Hutton, W. J. McGill and others have incorporated the Columbia Cotton Mills, Shelbyville, Tenn., with \$125,000 capital.

An expenditure of \$30,000 is planned by the Interwoven Mills, Martinsburg, W. Va., for building an additional three-story brick structure and installing new machinery.

The Hetrick Hosiery Mills, Walhalla, S. C., will occupy a fireproof building for its branch plant at Anderson, S. C. This building will be owned by R. T. Jaynes of Walhalla, who has awarded the construction contract to Otto Kaufman, also of Walhalla. It will be 115x52½x52½ feet in size, with reinforced concrete walls, floors and walls laid in concrete, the only wood being the roof timbers.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Bonds Voted.

Canadian, Tex.—Hemphill county voted \$150,000 bonds to construct roads.

Mocksville, N. C.—Town voted \$12,000 bonds to pave streets and sidewalks.

Tulsa, Okla.—City voted \$1,042,500 bonds for constructing roadway, etc.

Bonds to Be Voted.

Miami, Fla.—Dade county votes August 11 on \$140,000 bonds to construct roads, etc.

Palm Beach, Fla.—Town votes July 31 on \$50,000 bonds to improve streets, etc.

Contracts Awarded.

Dallas, Tex.—Dallas county awarded contract for 1 1/2 miles of concrete paving.

Des Arc, Ark.—Prairie county awarded \$92,000 contract to construct 9.3 miles of road.

Fayetteville, W. Va.—Fayette county awarded contract for 14-mile highway.

Mountain City, Tenn.—Johnson county awarded contract for 34 miles of pike road construction.

South Biltmore, N. C.—Town awarded contract to grade and pave street with concrete; 2130 linear feet; cost \$7500.

Winchester, Ky.—Clark county awarded contract for 6 miles of water-bound macadam road construction.

Contracts to Be Awarded.

Andalusia, Ala.—Covington county will grade, drain and surface with sand-clay 4 1/2 miles of road.

Charleston, S. C.—City will pave certain streets with sheet asphalt; cost \$17,791.60.

Clearwater Beach, Fla.—Clearwater Island Bridge Co. will pave 3 miles of streets; cost \$10,000.

Cleveland, Tenn.—City will pave 2 miles of streets with asphalt.

Des Arc, Ark.—Prairie county will build 10 miles of macadam highway costing \$59,000.

Evening Shade, Ark.—Sharp county will construct 14 miles of dirt road.

Fort Smith, Ark.—Sebastian county will build 15 miles of shale highway costing \$75,000.

Harrisburg, Ark.—Poinsett county will build 9 miles of macadam highway costing \$68,000.

Indianola, Miss.—Sunflower county will construct 25 miles of gravel road.

Jonesboro, Ark.—Craighead county will build 23 miles of macadam highway costing \$148,000.

Lonoke, Ark.—Lonoke county will build 13 miles of highway costing \$86,000.

Mocksville, N. C.—Town will pave street with concrete; cost \$10,000.

Montezuma, Ga.—City will pave \$12,000 square yards with vitrified brick, cement concrete, bituminous concrete, bituminous macadam or creosoted wood blocks.

Pocahontas, Ark.—Randolph county will construct 42 miles of macadam road.

Rison, Ark.—Cleveland county will construct 22 miles of gravel road costing \$126,000.

Staunton, Va.—City will construct 4050 square yards of paving.

Vega, Tex.—Oldham county will construct 50 miles of road.

Walnut Ridge, Ark.—Lawrence county will construct 5.78 miles of macadam road.

Williamson, W. Va.—Mingo county will construct 35 miles of earth road.

Arkansas Roads Costing \$562,000.

Six Arkansas counties have plans and specifications by the State highway engineer for constructing 92 miles of highway at a cost of \$562,000. These road improvements are as follows: Ten miles of macadam, costing \$59,000, for Prairie county, county-seat at Des Arc; 22 miles of gravel, costing \$126,000, for Cleveland

county, county-seat at Rison; 15 miles of shale, costing \$75,000, for Sebastian county, county-seat at Fort Smith; 9 miles of macadam, costing \$68,000, for Poinsett county, county-seat at Harrisburg; 23 miles of macadam, costing \$148,000, for Craighead county, county-seat at Jonesboro; 13 miles of macadam, costing \$80,000, for Lonoke county, county-seat at Lonoke.

Texas County Votes \$150,000 Bonds.

Bonds to the amount of \$150,000 have been voted for the construction of roads in Hemphill county, Texas. The county commissioners, county-seat at Canadian, will give prompt attention to determining details and calling for construction bids.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Want Carbonic Acid Gas Equipment.

P. P. BIANCO & Co., Cartago, Costa Rica, C. A.

Put us in contact with builders of small machinery for making gas liquid and putting it in steel cylinders of 50 pounds each. This gas is carbonic acid, and is used in the manufacture of sparkling waters. We wish to purchase a small plant of 200 to 300 pounds of liquefied gas per 10 hours. We want it to come complete; that is, with compressor, electric motor for connecting with current of 110 volts, 60-phase alternating, which is the kind this city supplies. The gas is to be obtained by combustion of wood and limestone by fire.

Wants to Represent American Manufacturers.

PISPRIS BROS., Athens, Greece.

We enclose detailed list of articles for which we are interested to obtain the exclusive agency on a commission basis, for Greece, from American manufacturers. We are in a position to introduce most advantageously into all Greek markets. (The list names several hundred articles in every-day demand. It includes: Bottles and accompanying supplies; beef products; brushes; canned goods; candies; clocks; copper; cotton goods; wood extracts; freezers for ice cream; glassware; hardware; instruments; knives; lamps; nails; office supplies; paints and similar manufactures; pharmaceutical preparations; pottery; rubber products; soap and kindred products; stationery; sugar; tinware, etc.)

For Sales in Argentina.

JOSEPH BAYAN (of Buenos Aires), The Edinboro, 203 W. 103d Street, New York.

I am interested in any line that pertains to the building or decorating trades. My business is entirely with architects, builders and decorators taking import orders. We do not carry any stock. I have been successful with the products of the American Enameled Tiling Co., Geo. H. Storm & Co. (lumber), 71st street and East River, New York; South & Central American Commercial Co. of New York, and the Nashville Hardwood Flooring Co., Nashville, Tenn.

Japan Wants American Manufactures.

TSURO SASAKI, Importer and Exporter, 200 Fifth Avenue, New York.

The Far Eastern Trading Co. having been dissolved, the general merchandise business (import and export) will be carried on by Tsuru Sasaki. I thank you for copy of MANUFACTURERS RECORD, and will subscribe. For export I would be interested in general merchandise in the nature of patented goods of all kinds, such as are made by machinery, and consequently are cheaper than hand-made.

Letter from Central Africa.

CHARLES D. BLYTH, Kasama, Northern Rhodesia, Central Africa.

Put me in communication with a universal store or general buying agent prepared to send me goods by post or otherwise in retail quantities. Owing to the war, it is difficult to get goods out from England, and there should be a considerable opening for an agent or general merchant firm here. Tell me if cattle-dipping tanks of galvanized iron are made in the United States, and put me in communication with a firm making them. Ask them to let me have particulars.

Mexico Wants Portland Cement Plant.

BOEDER & GAEDKE, care New Hotel Cohen, Hermosillo, Sonora, Mexico.

Capitalists considering to build Portland cement factory with capacity 200 barrels a day. Kindly send literature concerning manufacture of Portland cement, using machinery of newest type; approximate cost of complete machinery; also would be pleased if you would send drawing of cement factory of normal type. Inform us if advisable to have clay washed before using to get out high percentage of sand. We desire to figure on steel work, including boilers for the plant.

Chemicals, Metals, Textiles, Tools, Etc.

G. N. SPILIOTOPULOS, Patras, Greece.

Your MANUFACTURERS RECORD reached me, for which I thank you. Having noted the efforts you make to encourage export of American products, I ask you to recommend me to your friends. I am interested in all industrial products; metals, manufactured or not; textiles of all kinds; hides and skins, tanned and untanned; drugs and chemicals; household supplies; glassware; cotton and woolen goods; tools and machinery; timber for building; writing and printing paper; office furniture, etc.

Printing Presses, Hardware, Paints, Etc.

J. B. ADVANI & Co., Manufacturers' Representatives, Karachi, India.

We are writing to some American firms advertised in your paper, and referring to it as the source of our information. We are interested in American products, and are making efforts to secure sole agencies. Lines which interest us: Paper; stationery; printing machines; printing materials; watches; hardware; paints; soaps; perfumery; glassware.

Cycles, Graphophones, Sewing Machines, Etc.

S. N. BHUTTACHARJI, 5 Dhurumtollah Street, Calcutta, India.

I am an exporter of Indian embroidery and tea. Desire agencies from American manufacturers of these articles: Cycles and accessories; black varnished leather; condensed milk; talking machines and needles; harmonium reeds; glass phials; sewing machines; stoves.

Wants Hardware and Machinery.

LUIS VILLEGAS BARRENECHE, Mechanical Engineer, Popayan, Colombia, S. A.

I am interested in machinery in general, hardware and everything relating to mechanics. Get me into communication with houses making the goods mentioned and have them send catalogues and prices in Spanish, if possible.

Clothing, Hardware, Textiles, Tools, Etc.

BJERKE & Co., Christiania, Norway.

The goods we like to handle on commission are: Cotton piece goods and fabrics of all grades, plain and fancy, silk and cotton mixed; uniform cloth and all grades of woolen piece goods; handkerchiefs; silk ribbons; dress and necktie goods; Turkish towels, face

cloth and bath-robe materials; blankets; felts; khaki cloth; oilcloth; drills; drapery; wearing apparel for men, women and children; felt and fur hats; straw hats; Panama hats; hosiery; boots and shoes; rubber boots and overshoes; shirts, collars and cuffs; overalls; suspenders and garters; tricot goods; underwear; furs; suitcases; trunks; leather and cloth handbags; perfumery and toilet articles; talking machines; hardware and tools.

For All Kinds of Construction.

JUAN GUIJARRO Y A. PEREZ, ALVAREZ, Architects and Contractors, Santo Domingo.

We have formed a company for conducting building operations; also for acting as agent for concerns making and handling everything relating to erection of buildings, making roads, wagon industry, etc. Like to get into communication with some such houses. We are interested in materials for making roads and streets, for which there is great demand, as there are projects on hand for paving the principal streets of the leading cities and various municipalities of the republic, and we have been requested to furnish estimates on the products.

Building Materials and Textiles.

JEAN CHAPUIS, Rue Vielle-Monnaie 43, Lyons, France.

We desire to enter into business relations with American firms. Our chief business is in textiles, and we are looking after a good firm in your country either for cotton, worsted and artificial silk. We are also interested in any other line, provided it is wholesale. Just now we have a big inquiry for wood used in railways for sleepers. We are also interested in all lines concerning buildings, as there will be a large demand in our country for these articles for the reconstruction of devastated districts in the north of France.

Japan Wants American Products.

H. SASAKI, 100 W. 22d Street, New York, Representing Taisei Company of Osaka, Japan.

We want to represent American manufacturers of: Parchment paper for flannel and woolen weavers (pink color); card clothing for flannel and woolen weavers; aluminum tubes; bleaching machine of cotton-yarn waste; cleaning machine of cotton-yarn waste; machine for undoing cotton cloth (undo into cotton yarn); maker of linoleum manufacturing machine; plain film for moving pictures; woolen cloth filter (not press itself) for filtering paper; buttons for shirts and cuffs; stationery; knives and scissors; razors; neckwear; undershirts; gloves; socks; standing clocks.

Machinery Wanted in Spain.

RICARDO TUYET, Barcelona, Spain.

Ask the addresses of factories making machinery for manufacturing cables of hemp, fiber, etc., of large diameter for marine use. The demand is made on me by makers of the above goods who are unable to get supplies in Europe. Also please give addresses of people who supply binder twine, to take the place of hemp twine, for use with reapers and harvesters. I could sell large quantities and at a price much less than hemp, 200 for 100. I could give orders for delivery in large bundles or bales. The only difficulty would be transport by water.

Glassware, Tinware, Toys, Textiles, Etc.

ELISEO DEL VALLE, Dr Coss No. 142, Monterey, N. L., Mexico.

I am in close touch with jobbing trade of Mexico and have a traveling man through the central and northern States. I would like to get in touch with manufacturers of tinware, enamelware, glassware, queensware, semi-porcelain, toys, dry goods, etc. American manufacturers should not hesitate in doing business with Mexican merchants, as they pay cash for all goods purchased. Goods do not leave the United States until the full amount of the draft is paid.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

A Strong and Powerful Shear.

The "Armor Plate" power cut-off shear here illustrated is a new production, No. 127, made by the Buffalo Forge Co., engineer and manufacturer, Buffalo, N. Y. It is the largest of four sizes of the same type of machine which this company builds, and it will cut



"ARMOR PLATE" POWER CUT-OFF SHEAR.

flats $1\frac{1}{2} \times 5$ inches, rounds $1\frac{1}{4}$ inches, squares $1\frac{1}{2}$ inches and angles $5 \times 9-16$ inches. Its frame is built up of $3\frac{1}{2}$ -inch armor-plate steel mounted on wheels, and it has a 15-horse-power motor, but it can also be furnished with tight and loose pulleys.

The plungers and flywheels are of generous size, the bearings are extra long, and are provided with bronze-bushed oil-ring bearings. The gears are of cast iron and cut, and the pinion is of cut steel. The machine is provided with a jaw clutch and a cast-iron plunger guide. It is double back geared.

New Rivet-Cutting Method.

For cutting off rivet heads and stay bolts flush with plates by the oxy-acetylene process, it is desirable to have a cutting tip so designed as to permit of the gas jet playing parallel with the plates.

To meet this need the Prest-O-Lite Co., Inc., of Indianapolis, Ind., is manufacturing a special rivet and



PREST-O-LITE CUTTING TIP.

stay bolt cutting attachment, which is used in connection with the Type K cutting blow pipe, being screwed into the head in place of the regular cutting nozzles. The copper tip is bent at a convenient angle, and is adjustable to any position, facilitating operation in close quarters.

Much cleaner work in rivet and stay bolt cutting, it is stated, is possible with this attachment than with tips which do not permit of a cut truly parallel with the plates.

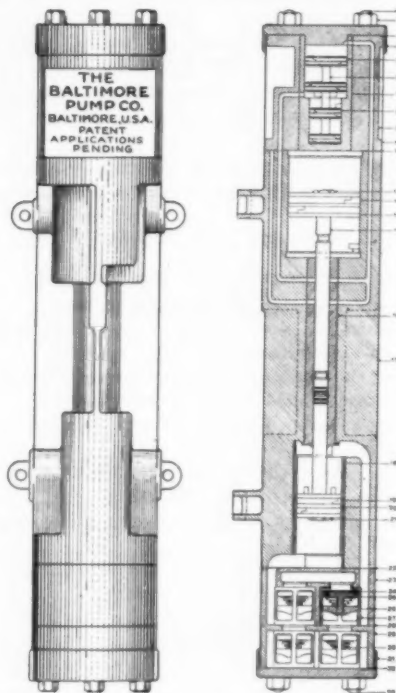
A Pump Without a Stuffing-Box.

The manufacture of a pump operated by either steam or compressed air and without a stuffing-box is one of the latest achievements of American inventive talent. It is especially adapted to boiler feeding, and other claims which the builder makes for it are that it is "fool-proof," has no exposed parts, and it is impossible for grit or other dirt to get into the cylinders, because the piston rod is enclosed. But the elimination of any stuffing-box in the mechanism is the main feature. In-

stead of using such a device, which from time to time requires renewal of packing, the manufacturer says:

"The stuffing-box is entirely eliminated by constructing both cylinders in a single chamber, with a piston rod dividing same, and enclosing the piston rod with the piston heads without any contact with the atmosphere. The piston rod is automatically packed by a film of fluid (water) held around the rod by the opposing pressures from the two cylinders, thereby dispensing with stuffing-boxes and their correlative packing parts. This results in overcoming all difficulties heretofore—waste of oil, consumption of packing material, leakage trouble, loss of power by friction and time of operator by adjusting, etc."

Furthermore, the steam valve is automatically and positively adjusted by the arrangement of the parts and the valve is not mechanically connected with the piston. The same power (air or steam as may be) which drives the main pistons back and forth also actuates the steam valve without any mechanical connections, automatically and unerringly adjusting the actions of the valve and pistons, by which the co-ordinate time of movement between the two is absolutely correct, insuring the maximum efficiency in pumping, thereby requiring no mechanical adjustment. This is said to be regarded as of the utmost importance by pump experts, engineers and mechanics. Moreover, there are only two nuts inside of the pump, one at each end of



EXTERIOR AND INTERIOR VIEW OF NEW PUMP.

the piston rod to hold plunger. Four steel bolts at each end of the pump outside can be withdrawn to get at either water valves or steam cylinder or piston, which drop out when the head is removed.

Used as a boiler-feed pump on locomotives, for instance, it is said that this pump can handle heated water from the tank (where it is warmed by exhaust steam from the engine) and put it in the boiler, thus avoiding the use of cold water, which lowers the temperature and the steam pressure as it is injected and causes greater fuel consumption. Practically no oiling is required, just a little through the steam end; the piston does not demand it. It is impossible to "short stroke," and there is no dead center.

The Baltimore Pump Co., Baltimore, Md., successor to the George A. Boyden Pump Co., which is the manufacturer of these pumps, has contracted with the Maryland Tube Corporation, Relay, Md., to build them, and two sizes are on the market, one 4-2 $\frac{1}{2}$ -4, with a capacity against pressure of 16 gallons per minute or without pressure from 50 to 60 gallons, and the other 6-4-8, with a capacity against pressure of 40 gallons per minute.

Heyward Taylor is vice-president of the company (the president has not yet been elected); George W. Rife, treasurer, and James H. Ridgely, secretary and assistant treasurer. Other directors, also of Baltimore, are George A. Boyden, Albert R. Stuart and Reginald Bragonier, who, with John W. Dunn of New York, complete the board. The authorized capital stock of the company consists of \$200,000 preferred and \$600,000 common.

KEROSENE DISPLACES GASOLINE.

McKeen Motor Car Co. Successfully Introduces the Use of Cheaper Fuel.

A. L. Mohler, formerly president of the Union Pacific Railroad, declared it necessary to obtain the use of kerosene instead of gasoline as fuel on railway gasoline motor cars, and after conducting many experiments and tests for several years the McKeen Motor Car Co., Omaha, Neb., has finally perfected a device whereby kerosene can be successfully substituted for gasoline on these cars, and W. R. McKeen, president and general manager, writes the **MANUFACTURERS RECORD** that this change may be made without any undue education of the motorman or any undue interference with the regular service ordinarily found on most railroads.

Mr. McKeen further says that hundreds of the company's customers and thousands of its correspondents have inquired, importuned and followed up their quest for information as to the progress it was making with the kerosene problem, and as to when they could be assured of using kerosene instead of gasoline. The company has now successfully and practically introduced the use of kerosene in the daily service of the McKeen gasoline motor cars, so he considers it proper to announce the fact that it can be employed as fuel in internal-combustion engines.

A description of the process, for which Mr. McKeen is authority, is as follows:

"Kerosene as a fuel for stationary engines, where the engine speed, power developed, heat, atmospheric conditions, etc., are reasonably constant, has for some time been found a perfectly practicable substitute for gasoline. Kerosene fuel for a variable speed engine—developing one minute insignificant horse-power at low speed and the next minute required to give high speed at full-load conditions—is a much more complicated problem. A 65,000-pound steel passenger car in daily service, making on an average of 210 miles per day in branch line local passenger service, with frequent stops, meeting other trains, etc., using kerosene as a fuel with no undue complications from insufficient lubrication, dirty and gummed valves, carbonized cylinders, and the like, averaging 25 to 50 per cent. increase in miles run per gallon of fuel, compared with gasoline, developing more power per engine for grade work, with the operating motorman expressing personal satisfaction on account of the greater ease and ability to make the grades and running schedule on time, is highly indicative that the means of substituting kerosene as a fuel in place of gasoline has been practically and economically attained.

"The car in question is an all-steel passenger motor car, 200 horse-power, six-cylinder engine of the variable speed type. The condensation of fuel in and the many troubles and complications of distribution in the long manifold pipe have been overcome by eliminating same. One carburetor of the multiple jet Duff type is applied to each cylinder. The engine is started on gasoline to avoid undue complications in control, but once in motion, kerosene is quickly substituted for gasoline. Kerosene as a fuel is broken up mechanically and atomized in a spray, is mixed and delivered to the cylinders in exact quantity, with the exact proportion of air, with the required temperature of the mixture, with no waste or condensation and at the exact time and place with the cylinder demand. There is no surplus of fuel partially consumed and wasted through the exhaust pipe; there are simple means of regulating the hot and cold air supply; there are water jets to use on heavy grades or in certain climatic conditions, and all are easily controlled by the ordinary throttle valve.

"Kerosene does not evaporate or mix with air as readily as good distillate or gasoline, but by the use of tempered air and mechanical means of regulating the quantity of fuel as well as atomizing it the requisite power explosive mixture is assured, and the results from some two months' operation are most gratifying from a point of economy. At the same time, the absence of undue complications in regular every-day railroad service is most indicative of the success and merit of this method of substituting kerosene for gasoline.

"With eight nozzles per cylinder (the total number of spray nozzles is 48), running light only one small nozzle per cylinder is used; the capacity of all six nozzles gives barely enough (and no more) fuel to keep the engine moving at a very low speed revolution per minute. There is no loading or fouling of the cylinders,

and the engine responds for power load immediately on opening the throttle.

"It is true that the six carburetors (or one per cylinder), with the additional float chamber, pipes, etc., makes some increase in the complication of parts; on the other hand, the unknown factors of a long manifold or distribution pipe, with all its detrimental features, are eliminated, and the slight increase in cost of the apparatus is insignificant as compared with the enormous economy obtained in the results."

A New Tool for Shipbuilders.

A new tool for use in shipbuilding, being designed to bend heavy steel shapes for ship frames, deck beams, etc., has been placed on the market. It is very compact, and is light as possible to be suitable for the work it is intended to do. The machine consists of a cylinder, a ram and an operating valve, mounted upon broad rollers, so that it may be moved quickly over the bending slabs by handles at either side of it. It is thus possible to bend long members to template without reheating and with a minimum of labor.

A loose pin fits into the holes in the bending slabs and serves as an abutment for the machine. The ram is double-acting, and its movement both forward and backward is under perfect control at all times. Provision is made to prevent overstroke. The illustration displays the machine equipped with a screw stem stop and release valve, but a single lever-operating valve can be furnished if desired. Power may be supplied from a suitable pump, or preferably from an accumulator service. The machine is built as shown, with a movement at right angles to the axis of the ram, or in a direction parallel to it.

The machine in the picture has a 10-inch stroke and



BENDER FOR SHIP FRAMES.

develops 18 tons at 1500 pounds per square inch and 20 tons at 1750 pounds per square inch pressure. It weighs 750 pounds, and is manufactured by the Watson-Stillman Company, 50 Church street, New York, with works at Aldene, N. J.

American Valve & Tank Co. Moves to Fairmont, W. Va.

The American Valve & Tank Co. has moved its business from Indianapolis, Ind., to a new location at Fairmont, W. Va. A model plant occupies a site 1100x210 feet.

The present foundry is 160x60 feet, and is so arranged that the width can be doubled and a 25 per cent. increase in length made without requiring any change in the arrangements of the equipment. The same construction policy has been adopted in the case of the machine shop, which is now 180x90 feet; provision has been made for the later addition of a building 200x90 feet. This provision for future expansion can be seen throughout the entire plant.

The main building, located just back of the general offices, houses the machine shop, plating department, painting department, testing department, stockroom and shipping department.

The foundry building contains the iron and brass foundries, stockroom, cleaning-room and core department, with the cupola located in the center, so that metal may be distributed over the various casting floors with equal facility.

The plant is equipped throughout with electric power, and an abundance of light and ventilation is provided

by monitor construction and Fenestra sash. Every possible convenience has been installed for the benefit of the employees.

Transportation facilities are furnished by the Baltimore & Ohio Railroad and the Pennsylvania Railroad, the tracks of both roads being directly in the rear of the plant, and by numerous Monongahela River packets.

In the construction of this plant the American Valve & Tank Co. declares that it has had its full share of the vexatious delays caused by the country-wide industrial congestion, but the completion of the new quarters will enable the company to catch up with the big demand which has followed the aggressive trade paper advertising which has been carried on by the company.

Edwards Rolling Doors.

A recent fire at the Locust street pier of the Baltimore & Ohio Railroad in Philadelphia displayed the efficacy of rolling doors made of galvanized iron, which in this instance saved thousands of dollars' worth of railroad



EXTERIOR OF PIER AFTER THE FIRE.

cars, besides large quantities of very valuable freight.

At this pier Edwards galvanized-iron doors enclose the end of an automobile platform, so that cars which it is necessary to leave on the platform during the night can be run into the enclosed end and the doors lowered. When the fire occurred there were six Buick six-cylinder cars on this end of the platform, together with a large pile of lumber. The fire was discovered at midnight, and was already blazing fiercely. Before it was extinguished it completely ruined the six machines, together with the lumber, besides burning off the entire roof of the platform.

But on one side of this platform stood box cars loaded with other automobiles, three tracks being occupied by them. On the other side were Pullman cars which had been stored in the yard. These cars were only 18 inches outside of the rolling iron doors, yet the paint upon them was only slightly blistered and absolutely no other damage was done to them. If the doors



INTERIOR, SHOWING EDWARDS DOORS STILL IN SERVICE.

had not been there the cars would have been ruined, for the fire was exceedingly hot.

The accompanying illustrations show how the place appeared after the fire. The doors remained intact and in position, excepting that the shaft sagged about 12 inches in the center from the excessive heat and the malleable iron gears were melted and warped in some instances, as shown in one of the pictures.

It is stated that the railroad officers agreed that had it not been for the Edwards galvanized-iron doors very much greater damage would have resulted. These doors are made singly and in groups, either black or galvanized, corrugated and interlocking, of all gauges and any kind of gear. They are made by the Edwards Manufacturing Co., 411 to 431 Culvert street, Cincinnati, O.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the post-office will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

AIRPLANE PLANTS, STATIONS, ETC.

Va., Richmond.—Old Dominion Airplane and Aircraft Mfg. Co., capital \$1,000,000, incptd.; Robt. S. Hudgins, Pres.; Chas. S. Barrow, V.-P.; C. L. Durbin, Treas.; Jas. E. Cuthbert, Secy.

BRIDGES, CULVERTS, VIADUCTS

D. C., Washington.—District Comms. and Fine Arts Com. approved plans by Geo. Oakley Totten, Jr., 808 17th St. N. W., Washington, for bridge across Rock Creek at Culvert St.; length 800 ft.; stone and reinforced concrete; 2 semi-circular bays at either end designed for placing of equestrian statues.

Fla., Jacksonville.—Duval County voted \$850,000 bonds to construct steel and concrete wagon and foot bridge across St. Johns River to connect with viaduct near center of business district.

Fla., Melbourne.—Melbourne-Indian River Bridge Co. reported organized to construct bridge across Indian River.

Fla., Miami.—Dade County votes August 11 on \$140,000 bonds to construct bridges and roads; bridges to include structure across East Coast Canal and across Snake Creek near Fulford. E. D. V. Burr, Chmn. County Comms.

Ga., Oglethorpe.—Macon County Comms. let contract to H. B. Hoppendietzel Co., Macon, Ga., to construct reinforced concrete bridge across Spring Creek; Arthur Pew, Engr., 509 Forsyth Bldg., Atlanta, Ga. (Lately noted to construct bridges costing \$1000 to \$6000 each.)

Md., Baltimore.—Baltimore & Ohio R. R. H. A. Lane, Chief Engr., Baltimore, let contract H. S. Kerbaugh, Inc., Baltimore and New York, to construct bridge across Bear Creek; 1210 ft. long; steel draw span 210 ft.; timber trestle approaches 475 and 525 ft.; also for bridge over Colgate Creek and over tracks of United Railways & Electric Co.; 2 steel girders to span railway and adjacent boulevard, 71 and 80 ft. long, with timber trestle over creek.

Miss., Greenville.—Washington County will construct reinforced concrete bridge over Granicus Bayou on Greenville-Lake Washington Rd.; County Supvs. receive bids

until August 6; J. S. Allen, Chief Engr. Highway Com. (See Machinery Wanted—Bridge Construction.)

N. C., Hickory.—Catawba County Comms., Newton, N. C., and Iredell County Comms., Statesville, N. C., let contract Virginia Bridge & Iron Co., Roanoke, Va., at \$98,800 to construct 3 steel bridges across Catawba River at Island Ford, Buffalo Shoals and Terrell, between Catawba and Iredell counties; cost \$41,068, \$36,312 and \$21,500, respectively; R. L. Greenlee of Marion, N. C., is Supervising Engr.

Okla., Davidson.—Company organized with John McClure (Pres. First State Bank), Davidson, Okla., and J. D. Parnell, Secy., Vernon, Tex., to construct bridge across Red River, between Davidson and Vernon, Tex.

Okla., Sapulpa.—Creek County Comms. plan to expend \$300,000 this year to construct and improve bridges and roads; build 2 steel and concrete bridges costing \$65,000 on central route of Ozark Trail, between Kellyville and Bristow; 100 and 50-ft. span, respectively; concrete floors. (See Road and Street Work.)

Okla., Tulsa.—City voted \$1,042,500 bonds to include \$30,000 for city's share of cost of constructing subways and viaducts. John H. Simmons, Mayor. (Lately noted to vote.)

Tex., Dallas.—Motley County Bridge Co., capital \$7500, incptd. by F. G. Reynolds and Frank E. Austin of Dallas, Roy Carter of Matador, Tex., and others.

Va., Rustburg.—Campbell County will construct steel bridge, consisting of three 37-ft. beam spans over Buffalo Creek on J. J. Davis Rd.; bids at County Clerk's office until July 18; G. P. Coleman, State Highway Commissioner, Richmond. (See Machinery Wanted—Bridge Construction.)

W. Va., Parkersburg.—Baltimore & Ohio R. R. H. A. Lane, Chief Engr., Baltimore, will reconstruct bridge across Little Kanawha River.

W. Va., Wheeling.—Kanawha County Comms. let contract Luten Bridge Co. of York, Pa., at \$16,000 to construct concrete bridge over Elk Creek at Bridge St., connecting Charleston with Broad Oaks.

CANNING AND PACKING PLANTS

Fla., Pensacola.—A. M. Cohen contemplates building plant to can and smoke fish and to manufacture fertilizer from refuse. (See Machinery Wanted—Canning Equipment; Fertilizer Machinery.)

Ga., Moultrie.—Moultrie Packing Co., E. L. Brooks, Mgr., determining details to double capacity at estimated cost of \$300,000; increase daily killing capacity from 600 to 1200 hogs and install coolers for this number; build addition with daily killing capacity 100 cattle; remodel and enlarge power plant; extend main building 100 ft.; build 80x30-ft. 4-story addition for meat storage; enlarge pickling, lard, cutting, shipping and other departments; add to stockpens and facilities for handling livestock; brick and concrete building construction; C. L. Brooks Engineering Co., Engr., Moultrie. (Lately noted advising Manufacturers Record of intention to double capacity at estimated cost \$330,000; Swift & Co., Chicago, recently mentioned as purchasing Moultrie company.)

Mo., St. Louis.—Foss Fruit Syrup Co., capital \$40,000, incptd. by John T. Windhorst, R. L. Wharton and Albert R. Walker.

N. C., Navassa.—Cape Fear Packing Co., G. Herbert Smith, Pres., 404 Southern Bldg., Wilmington, N. C., let contract to Joe Schad, Wilmington, N. C., to construct meat-killing and packing plant; 180x60 ft., 4-story and basement reinforced concrete and brick construction packing-house; install machinery with daily capacity 300 hogs and 10 cattle; Wilson & Sompayrac, Archts., Palmetto Bldg., Columbia, S. C.; Packers Architectural & Engineering Co., Engr., Manhattan Bldg., Chicago. (Noted in June as having plans and specifications, inviting bids for construction and machinery, etc.; previously organized with \$300,000 capital.)

CLAYWORKING PLANTS

Ga., Columbus.—Bricks.—Shepherd Bros. Brick Co., capital \$50,000, incptd. by A. H. Shepherd, A. W. Shepherd, M. E. Shepherd and others.

COAL MINES AND COKE OVENS

Ala., Birmingham.—McGonigal Coal & Iron Co., capital \$10,000, incptd.; T. G. McGonigal, Pres.; Jas. H. Awtry, Secy.-Treas.

Ala., Dora.—Dora Coal Mining Co. organized; J. M. Donaldson, Pres.-Mgr.; S. G. Grant, V.-P.; Tom Stobert, Secy.-Treas., 2129 Tenth Ave., South; all of Birmingham, Ala.; develop 240 acres coal land; daily output 300 tons; drift mine.

Ala., Sheffield.—Sheffield Coal & Iron Co., 71 Broadway, New York, has provided funds to build proposed by-product coke plant; defer construction for the present; W. J. Klutz, Gen. Mgr., Sheffield. (See Iron and Steel Plants.)

Ark., Clarksville.—Lucas-Mardis Coal Co., capital \$10,000, incptd.; M. A. Lucas, Pres.; M. F. B. Mardis, V.-P.; E. J. Mardis, Secy.; M. A. Lucas, Treas.

Ky., Ashland.—Hunt-Forbes Coal Co., capital \$10,000, incptd. by George Hunt, J. W. Bosley and M. I. Forbes.

Ky., Beattyville.—McGuire-Robinson Coal Co., incptd. by William Robinson, Cliffe McGuire and James McGuire.

Ky., Boyd County.—Kentucky Hicarbon Coal Co., capital \$50,000, incptd. by A. D. Dickey, G. T. Blankenship, Joe Scheffer and H. F. Hope, all of Matewan, W. Va., and others.

Ky., Evarts.—Clover Gap Coal Co. (lately noted chartered) organized; L. A. Bowling, Pres.-Mgr.; Geo. Whitcomb, Secy.; R. E. McNew, Treas.; develop 1500 acres; daily output 1200 tons. (See Machinery Wanted—Mining Equipment.)

Ky., Harlan.—Cambridge Coal Co. organized by W. A. Paddock, W. R. Queener, Wm. Sampson and others; develop 500 acres.

Ky., Hazard.—Blue Jay Coal Co., capital \$10,000, incptd. by T. F. McConnell, C. B. Rose and Charles Bischoff.

Ky., Lexington.—Cassidy Coal Co. increased capital from \$5000 to \$25,000.

Ky., Lexington.—Elkhorn Coal Co. increased capital from \$30,000 to \$100,000.

Ky., Louisville.—Paint Cliff Mines Co., capital \$50,000, incptd. by K. U. Meguire, Frank Sneed and A. H. Gardner.

Ky., Louisville.—Render Coal Co., capital \$10,000, incptd. by L. S. Streng, L. S. Mayer and A. W. Lee.

Ky., Mayking.—Mayking Coal Corp., B. A. Bass, Gen. Mgr.; Wm. A. Forrester, Engr.; plans development 5 ml. from Mayking; within next 60 days provide for daily capacity 600 tons coal; build mining town. (Recently noted organized with \$200,000 capital, etc.)

Ky., Middlesboro.—McDowell Coal Co., incptd. by A. S. McDowell, C. F. Huff and Mrs. I. E. Huff.

Ky., Middlesboro.—Reese Coal Co., incptd. by John Reese, Will Reese and Mossie Reese.

Ky., Middlesboro.—Wilhor Coal Co. organized; H. W. J. Carr, Pres.-Mgr.; I. Buchanan, V.-P.; develop 143 acres coal land; C. P. Davidson, Constr. Engr. (Previously noted incptd.)

Ky., Pikeville.—Blake Coal Mining Co., capital \$5000, incptd. by H. H. Stallard, Mrs. H. H. Stallard and Stony Amick.

Ky., Pineville.—Kentucky Ridge Mining Co., capital \$75,000, incptd. by Webster I. Sallee, T. C. Hamilton and A. M. Gregory.

Ky., Sergeant.—Whitley-Elkhorn Coal Co. leased 400 acres on Lotts Creek for additional development.

Ky., Torchlight.—Torchlight Coal Co., capital \$100,000, incptd. by M. S. Taylor, W. L. Taylor and C. E. Stafford.

Mo., Unionville.—Missouri Block Coal Co., capital \$6000, incptd. by B. M. Paul, Arthur Duffy and C. E. Davis.

Mo., Martinsburg.—Martinsburg Coal & Mining Co., capital \$3300, incptd. by F. C. Jacobs, Julius Kreiger and W. P. Moser.

Mo., St. Louis.—Union Colliery Co., capital \$100,000, incptd. by J. D. Mortimer, Chas. S. Ruffner and Louis H. Egan.

Tenn., Harriman.—Alpine Collieries Co., capital \$75,000, incptd. by R. B. Cassell, D. O. Harris, N. G. Carter and others.

Tenn., Knoxville.—Tennessee & Southeastern Coal Co., capital \$50,000, incptd. by John L. Boyd, D. H. Jenkins, L. C. Warwick and others.

Tenn., Oliver Springs.—Middle Creek Coal Co. organized; Wm. Ausmus, Pres.; J. B. Carr, V.-P.; J. M. Rogers, Secy.; M. J. Rogers, Treas.; develop 201 acres coal land; daily output 100 tons. (Lately noted, under Wartburg, as incptd. with \$25,000 capital.)

Va., Clinchfield.—Dixie Splint Coal Co., capital \$25,000, incptd.; W. H. Nickels, Jr., Pres.; W. R. Jesse, Secy.-Treas.; both of Big Stone Gap, Va.

Va., Norfolk.—Hampton Roads Collieries Co., capital \$100,000, incptd.; Thos. W. Shelton, Pres.; Oscar B. Ferabee, Secy.

Va., Roanoke.—Old Dominion Coal, Iron & Coke Corp., capital \$50,000, chartered; John B. Newton, Jr., Pres.; C. W. Owen, Secy.

Va., Tacoma.—Locust Hill Coal Co. will develop 300 acres; daily output 100 to 300 tons coal; purchased machinery. Lately noted incptd. with \$10,000 capital and E. G. Buck, Pres. (See Machinery Wanted—Cars.)

W. Va., Barracksville.—Fairmont Gas Coal Co., capital \$5000, incptd. by John R. Steel, Harold T. Steel, W. P. Bridge and others.

W. Va., Cedar Grove.—West Virginia Coal & Mfg. Co. organized; S. C. Savage, Pres.; W. L. Savage, V.-P.; A. L. Sheldon, Secy.-Mgr.; all of Charleston, W. Va.; develop 275 acres coal land. (Lately noted, under Charleston, as incptd. with \$15,000 capital.)

W. Va., Clute.—Bear Coal Co. (lately noted chartered with \$50,000 capital) organized; F. M. Cook, Pres., Beckley, W. Va.; C. A. Malcolm, V.-P. and Mgr., Clute; J. W. Graham, Secy., Hinton, W. Va.; develop 240 acres; daily output 240 tons; install hoisting engine and drum, 1-ton mine cars, etc. (See Machinery Wanted—Mining Equipment.)

W. Va., Clarksburg.—Fort Clark Coal Co., capital \$50,000, incptd. by T. J. Parrish, C. D. Floyd, F. L. Grove and others.

W. Va., Clarksburg.—Gainers Run Coal Co. organized; R. F. Mason, Pres., Meyersdale, Pa.; D. Bruce Mason, V.-P. and Mgr., Clarksburg; develop 5 acres; daily output 150 tons coal. (Lately noted incptd. with \$10,000 capital.)

W. Va., Clay.—Elkland Mining Co. incptd. by C. L. Voglesang, O. L. Hall, B. C. Barbar and others; develop coal mines at Beechy,

5 mi. from Clay; erect storehouse, 60x100 ft., 2 stories and basement.

W. Va., Huntington.—Pocahontas-Logan Coal Co. Inceptd. with \$8,000,000 capitalization by Wm. E. Deegans (Pres. of American Banking & Trust Co.), John Faulkner, John Hofmeier, L. N. Frantz and O. C. Huffman; Wm. E. Deegans, Pres. and Gen. Mgr.; consolidates Alene, Slab Fork, Orville, Albert, New Pocahontas, Pocahontas Smokeless, Guyan Valley, Deegans-Eagle and Faulkner coal corporations; Paragon Collieries Co. and Franklin Mining Co.; properties include 10,000 acres coal land and mining plants, with monthly capacity 100,000 tons coal.

W. Va., Lost Creek.—Thermal Coal Co. of Clarksburg leased 700 acres coal land and will develop.

W. Va., Mount Hope.—City Coal Co., capital \$35,000, inceptd. by A. H. McIntire, A. G. Kirtley, Geo. W. Bright and others.

W. Va., Mount Hope.—City Coal Co., capital \$35,000, inceptd. by A. H. McIntire, A. G. Kirtley, Geo. W. Bright and others.

W. Va., Princeton.—Hines Collieries Co. (lately noted inceptd. with \$200,000 capital) organized; H. E. Hines, Pres. and Gen. Mgr.; T. M. Beckwith, V.-P.; T. M. Fry, Secy.-Treas.; develop 1600 acres; plans daily output 1000 tons. (See Machinery Wanted—Mining Equipment.)

W. Va., Simpson.—John L. Robinson, Harry Kunst, Geo. Johnson and Earl Jenkins will develop coal mine.

W. Va., Thomas.—J. C. Shirk Coal Co., capital \$25,000, inceptd. by J. C. Shirk, D. E. Cuppette, Webster Hockman and others.

W. Va., Wayne.—Mozena Coal Co., capital \$25,000, inceptd. by C. W. Ferguson, R. C. Taylor, John B. Hardwick and others.

W. Va., Webb.—Marcum Coal Co., capital \$10,000, inceptd. by E. J. Ellett, J. Walter Graybeal, W. H. Walters and others.

W. Va., Welch.—Atwell Coal Co., capital \$100,000, inceptd. by Jas. A. Henchey, Guy J. Cooper, Graham Sale and others.

W. Va., Weston.—Red Stone Coal Co., capital \$25,000, inceptd. by J. W. Ross of Weston, Ira S. Hardman and T. J. Blair, Jr., both of Crawford, W. Va., and others.

W. Va., Wheeling.—Ohio-Wheeling Coal Co., capital \$25,000, inceptd. by E. P. Lough, Chas. M. Lough, W. C. Lough and others.

W. Va., Williamson.—Winifred Klean Coal Co., capital \$10,000, inceptd. by L. H. Sampson and F. H. Evans of Williamson, J. H. Young of Chatteroy, W. Va., and others.

COTTON COMPRESSES AND GINS

Ark., Jonesboro.—F. L. Gordon of Laurel, Miss., and John Gordon of Gulfport, Miss., plan to establish cotton compress.

Ark., Newark.—Newark Gln Co., capital \$4000, inceptd. by V. L. Pascoe, R. A. Magness, Hugh Magness and J. B. Fitzhugh.

Ark., Pine Bluff.—Pine Bluff Compress & Warehouse Co. increased capital from \$65,000 to \$130,000.

Miss., Webb.—Farmers' Gln Co., capital \$10,000, inceptd. by H. W. Macon, W. C. Sullivan, R. L. Armstrong and others.

N. C., Weldon.—Weldon Ginning Co., capital \$50,000, inceptd. by L. T. Garner, W. B. Brewry, T. O. Vaughan and others.

Tenn., Greenfield.—Merchants & Farmers Gln Co., capital \$10,000, inceptd. by R. B. Brasfield, E. M. Shannon, J. P. White and others.

Tex., Bruceville.—Electric Gln Co. organized; Henry Blackwell, Pres.; R. T. Edwards, V.-P.; Nolan Taylor, Secy.; erect 62x20-ft. sheet-iron building costing \$3000; install electric-driven plant; four 70 saw gin stands; purchased equipment. (Lately noted inceptd. with \$15,000 capital.)

Tex., Cleburne.—Farmers Gln Co. (Helsley A. Marchbanks and others) will build cotton gin; let contract H. F. Helsley for erection.

Tex., Farmersville.—Farmersville Independent Gln Co., capital \$12,000, inceptd. by M. W. Stewart, G. W. Lokey and C. M. Wilhite.

Tex., Greenville.—New Gln Co., capital \$25,000, inceptd. by W. E. Anderson, A. P. Richter and C. B. Jones.

Tex., Lone Oak.—Lone Oak Gln & Warehouse Co., capital \$20,000, inceptd. by W. C. Powell of Lone Oak, W. H. Bush of Greenville, Tex., and others.

COTTONSEED-OIL MILLS

Ga., Atlanta.—Buckeye Cotton Oil Co. will erect plant; 1 story; brick; 24x80 ft.; cost \$2900.

DRAINAGE SYSTEMS

Fla., West Palm Beach.—Supvrs. Lake Worth Drainage Dist., F. E. Ensell, Secy., let contract A. V. Wills & Sons of St. Louis, Mo., and Jas. T. McCarthy of Gainesville, Fla., to construct drainage system to involve building of canals, locks, dams and bridges within district comprising 132,000 acres; require removal of 7,265,000 cu. yds. earth and 180,900 cu. yds. solid rock; estimated cost, \$684,684; issued \$1,029,000 bonds.

La., Crowley.—Acadia Parish Police Jury organized drainage board for Fourth ward; plan \$60,000 bond issue to construct drainage system.

La., Crowley.—Iota-Loing Point Drainage Dist. organized with Vallin Miller, Stephen Fontenot and others as Commrs.; comprises 26,000 acres; total length of land and total length of canals 55 mi.; estimated cost \$60,000; issue bonds; Merrill Bernard, Engr., Crowley.

Tenn., Selmer.—Commrs. Lower Cypress Drainage Dist. of McNairy County will soon invite bids to construct drainage system; S. J. Dalton, Engr., Booneville, Miss., completed surveys; canal, with 3 laterals, 11.83 mi. long; 481,785 cu. yds. excavation; H. P. Wood and J. C. Houston of Selmer are Atty.

ELECTRIC PLANTS

Ark., Little Rock.—Quartermaster's Dept., Major John R. Fordyce, Constructing Quartermaster, let contract Little Rock Railway & Electric Co. to furnish electricity to Twelfth Division Cantonment near Little Rock.

Ark., Pine Bluff.—City is considering installation of ornamental lighting system in business district. Address The Mayor.

wiring, sewers, water-works and plumbing for cantonment at Columbia; estimated cost \$400,000; Hardaway Contracting Co. of Columbus, Ga., has general contract. (Lately incorrectly noted.)

S. C., Greenville.—Southern Power Co., Charlotte, N. C., is reported to construct transmission system to army camp near Greenville; cost \$30,000.

Tex., Beeville.—City will build electric-light plant; let contract John S. Fenner of Beeville at \$15,500.

Tex., Port Lavaca.—County Court is prepared to grant franchise for electric-light plant and water-works.

Tex., San Antonio.—San Antonio Public Service Co., chartered with \$4,700,000 capitalization to build and operate electric-light and power plants, gas plants, railways, etc.; directors, W. B. Tuttle, Walter P. Napier, R. C. Jones, S. J. Brooks and Howard Templeton of San Antonio, Emerson McMillin and Alanson P. Lathrop of New York. Mr. McMillan wires Manufacturers Record: New corporation is consolidation of two old and one new companies; no announcement ready.

FERTILIZER FACTORIES

Fla., Pensacola.—A. M. Cohen contemplates manufacture of fish fertilizer. See Canning and Packing Plants. (See Machinery Wanted—Fertilizer Machinery.)

Ga., Atlanta.—Union Seed & Fertilizer Co. will remodel plant at Mayson Ave. and railroad; also erect 2-story brick building to cost \$2500.

S. C., Meggett.—Meggett Fertilizer Co., capital \$20,000, inceptd.; J. W. Geraty, Pres.; D. E. Towles, V.-P., Secy. and Treas.; W. F. Carr, Gen. Mgr.

THE OFFICIAL PROPOSAL ADVERTISEMENTS

Appear This Week On Pages 90 and 91

Notices of bond sales, construction and improvement contracts to be let, equipment and supplies to be purchased, franchises offered, etc., inserted in this department bring bids from the most important bond buyers, investors, financial institutions, contractors, engineers, architects, manufacturers, and supply houses throughout the country.

Rate 25 cents per line per insertion.

The PROPOSAL department goes to press 9 A. M. Wednesday for the issue of the following day. If you cannot mail advertisement in time for any particular issue please wire copy by night letter.

Send for booklet of testimonial letters from public officials who have used the PROPOSAL department of the Manufacturers Record, for bond sales, construction work, etc.

Fla., Clear Beach.—Clearwater Island Bridge Co., E. W. Parker, Pres., 408 Curry Bldg., Tampa, will construct electric-light system; cost of plant, \$3000; 3000 ft. transmission system, cost \$2000; construction by owner. (Lately noted as Clearwater Beach Co.)

Fla., Delray.—Florida Power & Ice Co., capital \$25,000, inceptd.; J. B. McGinley, Pres.-Secy.; F. A. Leonard, V.-P.; H. P. McGinty, Treas.

Ga., Atlanta.—Arthur Tufts, Candler Annex, Atlanta (general contractor for army cantonment at Silver Lake) let electrical contract to Russell Electric Co. of Atlanta; contract embraces wiring of over 90 miles of streets, interior wiring of houses, erection of power plants, installation of motors, dynamos and transformers, placing of fixtures and all electric work for cantonment.

Ky., Ashland.—City will contract for ornamental street lighting system; has plans and specifications; bids until Aug. 6; F. W. Gelling, City Engr. (See Machinery Wanted—Electric Lighting Systems.)

Mo., Cecilton.—Company organized with Wm. H. Alderson, Pres.; Wm. H. Brown, Secy., and E. S. Short, Treas., to construct electric-light plant; reported to have let construction contract.

N. C., Mocksville.—City will issue bonds for water-works. V. E. Swain, Mayor.

N. C., Warsaw.—City Council approved \$15,000 bond issue to install electric-light system. Address The Mayor.

Okla., Oklahoma City.—D. & D. Motor Power Co., capital \$10,000, inceptd. by A. L. Dennstedt, Cleveland Dennstedt and G. I. Dorrance.

S. C., Columbia.—Quartermaster-General's Department let contract Tucker & Laxton, Inc., Charlotte, N. C., to construct electric

Va., Money Point.—Tidewater Guano Corp., capital \$5000, chartered; R. S. Robertson, Pres.; Blackstone, Va.; E. T. Hines, Secy., Norfolk, Va.

Va., Money Point.—Carolina Union Fertilizer Corp., capital \$5000, chartered; E. T. Hines, Pres.; C. B. Robertson, Secy.; both of Norfolk, Va.

FLOUR, FEED AND MEAL MILLS

Ala., Attalla.—Chamber of Commerce plans organization \$100,000 company to build mill with 24-hour capacity 2400 bu. corn, 30 tons feed and 50 bbls. flour.

Ga., Thomaston.—H. H. Birdsong and T. A. D. Weaver will install mill to grind 20 tons of hay or 40 tons corn per day and velvet beans, grain, etc., in proportion; has building; install syrup-mixing apparatus; electric power; ordered machinery.

Miss., Jackson.—Aviston Flour Co., capital \$25,000, inceptd. by Paul C. Guignon, Fred. Schliably and others.

Mo., Wellington.—Clover Leaf Milling Co., capital \$40,000, inceptd. by W. B. Waddell, J. R. Forster and G. A. Moore.

S. C., Bethune, Route 2.—Buffalo Milling Co., capital \$6000, inceptd. by W. S. Reamer, C. Y. Reamer and R. F. Dent.

S. C., Laurens.—W. R. Bramlett's Sons will build roller flour mill.

Tenn., Mountain City.—Mountain City Milling Co., capital \$10,000, inceptd. by J. W. Wright, R. F. Wright, I. S. Rambo and others.

Tenn., Pulaski.—R. F. McGrew (lately noted to rebuild mill) plans buildings of brick and wood construction; day labor; install machinery for daily capacity 50 bbls. wheat flour and 30 bu. cornmeal. (See Machinery Wanted—Flour Mill.)

Tex., Coleman.—Goldbuck Flour Mill, capital \$6000, inceptd. with S. R. Hale, Pres.; E. M. Davis, V.-P. and Gen. Mgr.; E. C. Edens, Secy.-Treas.; install equipment to manufacture milo maize flour; 40 H. P. gasoline engine; daily capacity 25 bbls.

Tex., Wichita Falls.—Wichita Mill & Elevator Co. advises Manufacturers Record: Contract is for erection combination mill and warehouse building; 321 ft.; reinforced concrete; mill end 8 stories and warehouse end 5 stories high; building contract to Burrell Engineering & Construction Co., Chicago; mill machinery to Nordyke-Marmon Co., Indianapolis; now buying new unit of 1000 barrels flour daily capacity; when building completed present unit of 1000 bbls. will be removed to it. (Lately noted letting contracts for building, machinery, etc.)

FOUNDRY AND MACHINE PLANTS

Ala., North Birmingham.—Railroad Frogs and Switches.—Kilby Frog & Switch Co. will erect addition to increase capacity; steel and brick construction; cost \$40,000 to \$50,000.

La., Lake Charles.—Ice Machinery.—Quick Ice-Making Machine & Mfg. Co., capital \$40,000, inceptd.; W. C. Grant, Pres., Abilene, Tex.; Juanita Pomeroy, V.-P., Lake Charles; Chas. F. Harris, Secy., Oklahoma City, Okla.; Frank M. Terrell, Treas., Lake Charles.

Miss., Sunflower.—Weevil Machines.—Delta Weevil Machine Co., capital \$2500, inceptd. by R. V. Fox, Jr., F. H. Telfair and others.

N. C., Charlotte.—Machinery.—Terrell Machine Co., 10 E. Fourth St., organized with E. A. Terrell, Pres.-Mgr., Charlotte, and C. S. Smart, V.-P. and Secy., Concord, N. C.; manufacture quill machines and ball-bearing housings; output varied. (Noted in June as inceptd. with \$24,000 capital.)

Tex., Beaumont.—Saws.—Texas Saw Works Co., capital \$10,000, inceptd. by W. T. Chenault and N. J. Kavanaugh of Houston, and E. E. Emmett of Conroe, Tex.

Tex., El Paso.—Hot-water Heaters.—Fireplace Hot Water Heater Co., capital \$3000, inceptd. by E. G. Perry, Fred A. Elliott, V. A. Ware and L. P. McChesney.

W. Va., Charleston.—Engine Governors.—Nox Automatic Air Governor Co., capital \$50,000, inceptd. by Wade H. Guthrie, T. C. Townsend, T. S. Clark and others.

GAS AND OIL ENTERPRISES

Ala., Mobile.—Dixie Oil Co. inceptd. with E. Gandy, Pres., Indianapolis, Ind.; F. W. Boykin, V.-P., Mobile; M. J. Dodson, Secy.-Treas., Indianapolis, Ind.

Ky., Ashland.—Iron City Oil Co., capital \$16,000, inceptd. by F. R. Henderson, W. F. Phipps and A. C. Lowry.

Ky., Franklin.—Petroleum Products Co., capital \$50,000, inceptd. by J. Nall LaRue, J. C. Parson and John F. LaRue.

Ky., Grayson.—Tygart Oil & Gas Co., capital \$10,000, inceptd. by R. M. Bagby, J. W. Stovall and J. M. Rose.

Ky., Lexington.—Hickory Valley Oil & Gas Co., capital \$20,000, inceptd. by C. W. Sales of Pryce, R. J. Cud of Wilmore, C. M. Stratton of Nicholasville, and others.

Ky., Monticello.—Wayne County Contracting & Drilling Co., capital \$3000, inceptd. by Elmer L. Sandusky, D. L. Johnson and Em Brown.

Ky., Scottsville.—American Oil & Gas Co., capital \$100,000, inceptd. by J. W. Collins, A. H. Jacobstein and R. S. Welch.

Mo., Kansas City.—Three H. & R. Oil & Gas Co., capital \$150,000, inceptd. by Wm. Hicks, H. A. Hirschfeld and S. W. Ramsey.

Mo., Kansas City.—Sunflower Oil & Gas Co., capital \$25,000, inceptd. by Frank J. and Maude Engleman and Thos. M. Hollyman.

Mo., Kansas City.—Hexagon Oil Land Co., capital \$2000, inceptd. by B. F. Ford, J. W. Farrar and J. M. Hord.

Mo., Kansas City.—Pearson Oil & Mining Co., capital \$100,000, inceptd. by L. S. Sudarth, D. D. Downey and J. G. Joyce.

Okla., Ardmore.—Enterprise Oil Co., capital \$100,000, inceptd. by W. C. Downing, S. A. Douglas and R. O. Dulaney.

Okla., Clinton.—Mills Petroleum Co., capital \$25,000, inceptd. by E. K. Frank, O. S. Anderson and Eli L. Admire; all of Clinton, Okla.

Okla., Enid.—Garfield Oil & Refining Co., capital \$150,000, inceptd. by Clinton C. Blasel and Jas. W. Steen of Enid, and John L. Brown of Vici, Okla.

Okla., Muskogee.—H. & W. Oil Co., capital \$16,000, inceptd. by Albert T. Wood, Eustace A. Hill and R. Ray.

Okl., Oklahoma City.—Nil Desperandum Oil Corp., capital \$20,000, chartered by Jas. Harrington and others.

Okl., Oilton.—Logan Oil & Gas Co., capital \$60,000, inceptd. by W. S. McCray and J. R. Galloway of Oilton, and S. F. Farha of Oklahoma City.

Okl., Oklahoma City.—Torchlight Oil Co., capital \$300, inceptd. by J. P. Bell, W. M. Blake and J. T. Bryant.

Okl., Oklahoma City.—Gypsy Queen Oil & Gas Co., capital \$100,000, inceptd. by W. J. Lanyon, T. H. Roberts and A. F. Wood.

Okl., Pawhuska.—Drexel Oil & Gas Co., capital \$100,000, inceptd. by H. P. White, H. L. Levin and W. H. Aaron.

Okl., Sapulpa.—Newkla Oil Co., capital \$60,000, inceptd. by W. M. Harrison and E. C. Phenix of Sapulpa and C. F. Hillman of Cushing, Okla.

Okl., Tulsa.—Craver Oil & Gas Co., capital \$100,000, inceptd. by Chas. F. Craver, Ada M. Craver and A. H. Craver.

Okl., Tulsa.—Zalonna Oil & Gas Co., capital \$100,000, inceptd. by W. C. Frost and W. E. Kemper of Tulsa, and M. M. Williams of Garden City, Kan.

Okl., Tulsa.—Conejos Oil Co., capital \$200,000, inceptd. by J. W. Johnson, P. S. Johnson and Peter Delchman.

Okl., Tulsa.—Dickson Oil & Gas Co., capital \$25,000, inceptd. by G. L. Marguess and others.

Tex., Beaumont.—Thousand Care Oil Co., capital \$24,000, inceptd. by Thos. J. Baten, W. A. Tatum, R. C. Davant and J. A. Danielson.

Tex., Dallas.—Reynolds Oil Co., capital \$30,000, inceptd. by W. F. Reynolds, Porter Farrell, C. H. Jackson and others.

Tex., El Paso.—Gas Plant.—El Paso Gas Co. (American Power & Light Co., Archt., 71 Broadway, New York) will erect 120x43-ft. building for warehouse and shop and another for machinery; concrete foundation; brick walls; steel trusses; cement floors; asbestos protected metal roof.

Tex., Fort Worth.—Mutual Oil Co., capital \$40,000, inceptd. by E. F. Jarrel and J. R. Wilhelm of Fort Worth and H. C. Jarrel of Dallas.

Tex., Henrietta.—Lesh Drilling Co., capital \$10,000, inceptd. by P. F. Lesh, R. J. Brown and A. C. Parks.

Tex., Houston.—Charles Oil Co., capital \$50,000, inceptd. by C. E. Heidingsfelder, B. N. Flickinger and P. W. Delane.

Tex., Houston.—Oil Refinery.—Hoffman Oil & Refining Corp. (lately noted inceptd.) organized; H. H. Hoffman, Pres.; now drilling 7 wells; will lay 3500 ft. 4-in. pipe line; build pipe line with hourly capacity 1000 bbls. oil; has refinery with daily capacity 1000 bbls. and plans constructing another. (See Machinery Wanted—Refinery Equipment.)

Tex., LaPorte.—Oil Refinery.—Eureka Refining Co., capital \$15,000, inceptd. by H. M. Harrison, W. L. Willis and C. W. Palmer.

Tex., Robert Lee.—Valley View Oil & Gas Co., capital \$30,000, inceptd. by G. S. Arnold, F. K. Turney, Aubrey Ashley and others.

Tex., Turkey.—Turkey Gas & Oil Development Co., capital \$7000, inceptd. by R. F. Meacham, Fred. Lacey, J. E. Kelley and others.

Va., Danville.—Gas Plant.—City will erect brick addition to retort house at gas works; Frank Talbot, Supt. City Gas Works, receives bids until July 23; plans and specifications on file with J. O. Magruder, City Engr. (Lately noted to erect \$12,500 addition to increase capacity 33½ per cent.)

W. Va., Charleston.—Dow Oil & Gas Co., capital \$10,000, inceptd. by M. G. Deaderick, C. E. Goettman, H. M. Houston and others.

W. Va., Dunbar.—Grosscup Oil Co., capital \$100,000, inceptd. by Fred Paul Grosscup, Paul B. G. Rosscup, W. D. Moore and others.

W. Va., Ritchie County.—Gasoline Plant.—Chalmers Oil & Gas Co., Munsey Bldg., Baltimore, Md., will build gasoline plant; let construction and equipment contract to McKunkin Machine Co., Sistersville, W. Va.

W. Va., Mannington.—Reserve Oil Co., capital \$10,000, inceptd. by Jess Shimp, W. L. Lealy, K. V. Cunningham and others.

W. Va., New Cumberland.—Gas Plant.—Shady Glenn Gas Co., capital \$5000, inceptd. by Paul S. Cullen, John Crissiner, Wm. Crissinger and others.

HYDRO-ELECTRIC PLANTS

Ga., Tallulah.—Georgia Railway & Power Co., Atlanta, advises Manufacturers Record: C. G. Adsit, Consult. Engr.; 6 unit details of

construction are 1100 ft. steel penstock, 5-ft. diam., operating under 600-ft. head; 18,600 H. P. Francis type water turbine; 3-phase, 60-cycle, 6600-volt, 12,000 K. V. A. generator; three 4000 K. W., 6600 to 110,000-volt water-cooled transformers; necessary high and low tension switches for control of transformers and generators; amount of additional H. P., 18,600; has let all contracts. (Lately noted wiring Manufacturers Record as to decision for installing 6 unit at cost of \$330,000, completing station to full capacity of 108,000 H. P., etc.)

ICE AND COLD-STORAGE PLANTS

Ark., Little Rock.—Citizens' Ice & Cold Storage Co., C. M. Conway, Pres., Texarkana, Ark., purchased Little Rock Ice Co.'s plant; plans to expend \$100,000 to remodel into re-icing and cold-storage plant. (Lately noted inceptd. with \$50,000 capital.)

Fla., Delray.—Florida Power & Ice Co., capital \$25,000, inceptd.; J. B. McGinley, Pres.-Secy.; F. A. Leonard, V.-P.; H. P. McGinty, Treas.

Fla., Plant City.—Plant City Public Service Co. let contract McGucken & Hyer of Tampa to erect addition to cold-storage plant; daily capacity, when enlarged, 50 tons. (Incorporation and further facts previously noted.)

Fla., Winter Park.—Winter Garden Light & Water Co. will install 25-ton ice plant and cold-storage room.

Ga., Montezuma.—James Harrison will install 10-ton ice plant at his water power; raw water ice; has artesian well.

La., New Orleans.—Appalachian Corp., Atlanta, Ga., plans extensive improvements; Jas. L. Wright, V.-P., advises Manufacturers Record: Appalachian Corp. purchased property of Brooklyn Cooperage Co. (subsidiary of American Sugar Refining Co.) for \$300,000; comprises 360x308-ft., 3-story brick building, occupying city block; 5,000,000 cu. ft. space; practically one-fourth of this converted into cold storage at expenditure of \$90,000; provide 950,000 cu. ft. cold-storage space; building alterations for cold storage installation estimated to cost \$70,000; cold-storage machinery estimated to cost \$300,000; Tait-Nordmeyer Engineering Co., Engr., St. Louis; Diboil & Owen, Archts., New Orleans. (Lately noted contemplating total expenditure \$1,000,000 for this and other improvements.)

IRON AND STEEL PLANTS

Ala., Birmingham.—Birmingham Mills, Finishing Mills, etc.—Tennessee Coal, Iron & Railroad Co., Geo. G. Crawford, Pres., announced plans for following additions: At once begin construction on group of mills designated as Fairfield Works; electrically driven reversing blooming mill to roll slabs and blooms for 2 finishing mills; finishing mills to consist of electrically-driven 110-in. plate mill and electrically-driven combination mill designed to roll shapes, bars and light rails; products of shape and plate mills delivered by electrically-operated telfers to large fabricating shops; mills selected to produce products which particularly required in connection with war; new plant location is in Possum Valley, southwest of Fairfield by-product ovens; housing of new employees provided in part by company through construction of houses for 600 families; total number houses required considerably in excess of this number. (In connection with recently announced plan for \$11,000,000 additional developments; company controlled by U. S. Steel Corp.)

Ala., Sheffield.—Iron Furnace, etc.—Sheffield Coal & Iron Co., Jas. Gayley, Pres., 71 Broadway, New York, advises Manufacturers Record: Arrangements completed for financing; put plant in operation at earliest date; plan provides funds to build by-product coke-oven plant and equip furnace and mines with modern facilities for economical operation; construction of by-product ovens will be deferred because of high cost of construction and difficulties of securing delivery of material; meanwhile will manufacture coke at beehive ovens, Jasper, Ala.; W. J. Klutz, Gen. Mgr., Sheffield.

La., New Orleans.—Rolling Mill.—Dixie Steel Corp., Metropolitan Bank Bldg., advises Manufacturers Record: B. W. Seidel, Pres.; J. A. Stubbs and John G. Grosz, V.-Ps.; Jos. L. Walle, Treas.; construct 20x60-ft. building of steel frame and corrugated iron; install plant with capacity of 200 tons daily on three eight-hour shifts; manufacture bar steel, nuts, bolts, etc.; equipment to include rolling mill driven direct by individual electric motors, electric traveling train equipped for electric magnet

to unload and handle scrap metal, automatic charging apparatus, etc.; estimated cost, \$250,000. Lately noted organized with \$500,000 capitalization and wiring principal plant details to Manufacturers Record. Considering purchase of second-hand equipment. (See Machinery Wanted—Rolling Mill.)

Tex., Fort Worth.—Rolling Mill.—Geo. W. Armstrong & Co., Inc., may possibly install another unit for manufacturing cotton ties, but not before next fall. (Lately noted increasing capital to \$650,000, etc.)

W. Va., Charleston.—Projectile Plant.—Armor Plate Board, War Dept., Washington, D. C., has completed plans and specifications for building and equipping projectile plant; 4 principal buildings; machine shop, foundry and forge shop, heat-treatment shop and lavatory and locker building; intends including these 4 structures in single contract; machine shop 40x111 ft., consisting of main span with side span on each side and lean-to extending along portion of one of side spans; no dividing partitions excepting for toolroom; girders for overhead traveling bridge cranes in each span; buildings supported on concrete foundations with structural steel frame, concrete foundation and base course, hollow tile block belt horses and pilasters, steel sash for window area, built-up room covering over gypsum composition or concrete slab roofs; floors of concrete; foundry and forge shop 50x135 ft., consisting of wide span flanked by side spans; ends open for height of several feet above base course and no floor required; general construction, window areas, etc., similar to machine shop; heat-treatment building 192x53 ft., consisting of 2 spans with line of interior columns; construction similar to machine shop and foundry-forge shop; lavatory and locker building 75x12 ft., 1 story, hollow tile block structure on concrete footings and foundation wall; window sills and lintels of reinforced concrete; floors of concrete and interior walls plastered; machinery equipment (bids in) will include 3000-ton hydraulic piercing press with hydraulic intensifier costing \$99,400, four motor-driven hydraulic pumps costing \$41,825, three 6-ton electric furnaces costing \$45,500, two 500-ton hydraulic piercing presses costing \$41,825, two 6000-lb. ingot manipulators costing \$21,600, various other machines costing from \$2037 to \$6173; building bids opened July 16. (Lately noted having plans and calling for bids; in April announced \$1,750,000 appropriation for projectile plant and \$11,000,000 for armor-plate plant; reports state armor-plate plant construction will be deferred.)

LAND DEVELOPMENTS

Fla., Indian Rocks.—Indian Rocks Development Co., capital \$10,000, inceptd.; Horace H. Hamlin, Pres.; C. W. Redell, V.-P.; both of Indian Rocks; M. L. Dawson, Secy.-Treas., Brooksville, Fla.

Ga., Savannah.—Atlantic Agricultural Corp. chartered with \$140,000 capital to develop agricultural land and raise livestock; incorporators, Charlton G. Ogburn of Savannah and R. C. Horne, Jr., of Beaufort, S. C.

La., Lake Charles.—Calcasieu Farm Lands Co., capital \$40,000, inceptd.; Chas. O. Noble, Pres., Lake Charles; Sam J. Welsh, V.-P. and Gen. Mgr.; John J. Wetherill, Secy.-Treas., both of Vinton, La.

Mo., Cardwell.—Lafayette Land & Farming Co., capital \$100,000, inceptd. by A. Bertig, J. P. Robinson, F. C. Hahn and others.

S. C., Columbia.—Sylvania Land Co., capital \$1000, inceptd.; John L. Thomas, Pres.; Jos. L. Nettles, V.-P.; Ashley C. Tobias, Jr., Treas.; J. H. Lee, Secy.

Va., Norfolk.—Norfolk County Farms, capital \$250,000, inceptd.; Geo. C. Stanley, Pres., Wallaceton, Va.; Edward W. Wolcott, Secy., Norfolk.

W. Va., Charleston.—Liberty Land Co., capital \$20,000, inceptd. by Louis Rosenbaum, Wm. H. Hart of Cumberland, Md., Wm. Ruehl and others.

LUMBER MANUFACTURING

Ark., Donaldson.—Ohio Lumber Co., capital \$20,000, inceptd.; Wm. G. Baldwin, Pres.; W. W. Vosburgh, V.-P.; Harvey E. Webster, Secy.-Treas.

Fla., Jacksonville.—Florida Mill Lumber Co., capital \$50,000, inceptd.; Cromwell Gibbons, Pres.; S. D. T. Cosens, V.-P.; W. A. Daniel, Secy.-Treas.

Fla., Orto.—Gress Mfg. Co. (lately noted to rebuild burned planing-mill), Jacksonville, will build plant; 112x90-ft. planing-mill with 24x60-ft. engine and toolroom; day labor;

ordered machinery costing \$30,000; daily capacity 100,000 ft. flooring and finish; J. A. Carr, Construction Engr., Jacksonville; Angela Montanari, Archt., Millville, Fla. (See Machinery Wanted—Shafting, etc.)

Fla., Wauchula.—H. M. Alexander, Mgr., Home Lumber Co., will install saw and planing mill; has buildings; purchased equipment.

La., Jonesville.—Jonesville Lumber & Veneer Co. organized with A. W. Stewart, Pres.; B. Y. Lewis, V.-P.; J. N. Warner, Secy.; J. W. Lewis, Treas. and Gen. Mgr.; build hardwood mill; daily capacity 20,000 ft.

Misa, Clayton.—Atley-Holloway Co., Chicago, purchased 13,000 acres timber land; install band mill to cut hardwood.

Miss., Corinth.—Horse Creek Lumber Co. organized by Hubert Young of Corinth, C. J. Harris and Geo. R. Hogg of St. Louis; purchased timber land; install saw and planing mills.

Miss., Laurel.—Lowery Lumber Co. purchased hardwood timber land 6 mi. southeast of Laurel; will manufacture lumber, especially timber for shipbuilding.

Miss., Quitman.—Long Bell Lumber Co., Kansas City, Mo., purchased Mississippi Lumber Co. interests, including Mississippi Eastern Ry.; purchase includes extensive timber tract with 21 mi. railway and mill with daily capacity 100,000 ft. lumber; reported to enlarge this mill.

N. C., Goldsboro.—Saulston Lumber Co., capital \$50,000, inceptd. by H. P. Pope, A. P. Gardner and H. J. Morris.

Okl., Taneha.—Taneha Mill & Lumber Co., capital \$25,000, inceptd. by Moritz Grunberg, W. V. Biddison and D. F. Gore.

Tenn., Gallatin.—C. E. Northrup & Son (lately noted to rebuild burned planing mill) will construct 3 buildings; day labor; install woodworker, self-feed rip saw, etc. (See Machinery Wanted—Woodworking Equipment.)

Tenn., Knoxville.—Cockrum Lumber Co., capital \$10,000, inceptd. by W. A. Cockrum, Dudley G. Cockrum, F. R. Starn and others.

Tenn., Memphis.—Jorgensen-Bennett Mfg. Co., capital \$25,000, inceptd. by H. J. M. Jorgensen, E. T. Bennett, J. C. Smith and others.

Tex., Deweyville.—Sabine Tram Co. will rebuild double-band sawmill reported burned at loss of \$100,000.

Tex., Lone Oak.—Lone Star Mill Co., capital \$50,000, inceptd. by R. P. Etter and W. C. Dowell, both of Lone Oak, and W. H. Bush of Greenville, Tex.

Tex., Paducah.—R. D. Jones Lumber Co., capital \$50,000, inceptd. by R. D. Jones of Dallas, A. B. Jones of Quanah, Tex., and R. C. Filbricht of Houston, Tex.

Va., Newport News.—M. R. Piland Lumber Co., capital \$50,000, inceptd.; M. R. Piland, Pres.; H. B. Neal, V.-P. and Secy.

Va., Richmond.—Santee Timber Corp., capital \$500,000, chartered; P. D. Camp, Pres.; P. R. Camp, Secy.; both of Franklin, Va.

METAL-WORKING PLANTS

Md., Baltimore.—Brass and Metals.—Maryland Brass & Metal Co., Guilford Ave. and Federal St., let contract Price Concrete Construction Co., Maryland Trust Bldg., Baltimore, to erect addition to plant; 2 stories; 46x31 ft.; plans by Chas. M. Anderson, 324 N. Charles St., Baltimore. (Lately noted.)

W. Va., Parkersburg.—Chains.—Cleveland Chain Mfg. Co., Cleveland, Ohio, is reported to build chain factory.

MINING

Ala., Birmingham.—Iron.—McGonigal Coal & Iron Co., capital \$10,000, inceptd.; T. G. McGonigal, Pres.; Jas. H. Awtry, Secy.-Treas.

Ark., Yellville.—Lead and Zinc.—Liberty Lead & Zinc Co. purchased Crooked Creek Mining Co.; will build 100-ton mill. (Crooked Creek company lately noted to build mill.)

Ga., Cartersville.—Barytes.—Thompson-Weinman Co. will install (at barytes mines) 150-H. P., 2300-volt, 3-phase, 60-cycle, 1800 r. p. m. squirrel-cage induction motor for direct connection to centrifugal pump; Georgia Railway & Power Co. to furnish electricity.

Ky., Covington.—Sherley Mining Co., capital \$1000, inceptd. by R. L. Tilton, M. L. Kirkpatrick and B. C. Collins.

Ky., Louisville.—Graphite.—Southern Star Graphite Co. increased capital from \$50,000 to \$75,000.

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Mo., Bagnell.—Bagnell Milling & Mfg. Co., capital \$50,000, inceptd. by F. L. Hopkins, J. E. Baird and C. J. Woodbury.

Mo., Carthage—Zinc.—Imperial Zinc Co., capital \$400,000, inceptd. by Budd M. Robinson and Alice M. Robinson of Joplin, Mo., and H. F. Sundin of Kansas City, Mo.

Mo., Joplin—Lead and Zinc.—Olean-Joplin Mining & Development Co., capital \$50,000, inceptd. by W. H. Simpson, W. F. Davis and J. H. Vanstone.

Mo., St. Louis—Lead and Zinc.—Hematite Lead-Zinc Co., capital \$75,000, inceptd. by Sheridan E. Cooper, Hall L. Cooper, Fred. A. Parker and others.

Okla., Miami.—Hare Mining & Milling Co. (Alfred Hare and Rev. H. H. Hulton of Oklahoma City, and others) will build mill; contract let. (Lately noted inceptd. with \$125,000 capital.)

Okla., Miami.—Triangle Mines Co., capital \$50,000, inceptd. by Karl N. Sweem, N. C. Barry and J. D. Bomford.

Okla., Oklahoma City.—Portland Mining Co., capital \$150,000, inceptd. by Chas. C. Hill, Otto V. Lee and J. W. Morrison.

Okla., Picher—Lead and Zinc.—Hare Mining & Milling Co., Alfred Hare, Prest., Oklahoma City, will build mill to cost \$45,000 at lead and zinc mines.

Okla., Picher.—Lead and Zinc.—Bilharz Mining Co. will build concentrating plant; leased 40 acres.

Okla., Quapaw.—Paramount Mining Co., capital \$100,000, inceptd. by Albert Crenshaw of Nowata, E. C. Balty and L. L. Turner of Springfield, Mo.

Okla., Tulsa.—Royal Mining Co., capital \$25,000, inceptd. by John D. Richards, Nellie C. Richards and Hugh F. Kasey.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile.—Docks.—City Com. ordered election for August 13 to vote on \$600,000 bonds to build wharves, docks and warehouses on Arlington property; Harry Pilans, Mayor; plans approved by War Dept. (Lately noted to have voted bonds for telfer system and to order election for Arlington docks.)

Ark., Bridge Junction.—Levee.—St. Francis Levee Board, Hugh D. Tomlinson, Prest., Butler, Ark., will extend levee 4 mi. to mouth of St. Francis River; appropriated \$200,000.

Md., Elkton.—Dredging.—Government let contract W. H. French Dredging & Wrecking Co. of Norfolk, Va., to dredge Elk River between Bridge St. bridge at Elkton to Frenchtown Wharf, 3 mi.; deepen channel to 8 ft. and widen to 100 ft.; 36,000 cu. yds. excavation. (Lately noted as lowest bidder.)

Miss., Jackson.—Pier.—Beauvoir Board of Trustees have report recommending rebuilding of pier (at State home) destroyed by storm.

Okla., Kingfisher.—Dam.—Chicago, Rock Island & Pacific Ry., C. A. Morse, Chief Engr., Chicago, Ill., let contract to construct reinforced concrete dam.

S. C., Anderson.—Swimming Pool.—G. H. Bailes and A. S. Farmer are promoting erection of swimming pool; concrete; 40x100 ft.; secure water from nearby springs; install filter plant; purchase vacuum cleaner to clean pool; pool cost \$4500 to \$5000; C. J. De Camp, Engr. (See Machinery Wanted—Filter, etc.)

Tenn., Memphis.—Levee.—Government will construct 1,206,000 cu. yds. earthwork in Lower Tensas and Barataria Levee Dist.; bids at U. S. Engr. office, Queen and Crescent Bldg., New Orleans, until July 24. (See Machinery Wanted—Earthwork Construction.)

Tex., Galveston.—Seawall.—Galveston County Comms. and U. S. Government considering plan for extending seawall from present eastern terminus to Fort Jacinto; distance 13,500 ft.; Galveston County to expend \$500,000 and Government has already appropriated \$1,185,000; completion of wall will add several square miles of land to city and provide large military reservation at entrance to harbor for Government.

Tex., Houston.—City Council approved plans by E. E. Sands, City Engr., for wharf on Houston Ship Channel at foot of Main St.; plans provide for concrete bulkhead 572½ ft. long on south side of channel at Main St. viaduct; use material excavated to fill in behind bulkhead; bids until July 30; noted in April to have acquired 20-acre site on channel at Manchester as site for wharf. (See Machinery Wanted—Wharf Construction.)

MISCELLANEOUS ENTERPRISES

Ark., Little Rock.—Grain Elevator.—Geo. Niemeyer Grain Co., capital \$50,000, organized by Geo. Niemeyer, E. R. Johnson, G. F. Williams and others; Mr. Niemeyer is Prest.; continues established enterprise; erect concrete grain elevator.

Fla., Palm Beach.—Incinerator.—Town votes July 31 on \$50,000 bonds to erect incinerator, purchase fire equipment, etc. Address Town Clerk. (See Road and Street Work.)

Fla., Tallahassee.—Grain Elevator.—R. O. Collins, R. G. Johnson, J. C. Upchurch and others are promoting erection of grain elevator; capacity 15,000 bu.; organizing company with \$10,000 capital.

Ga., Atlanta.—Bakery.—F. O. Stone Baking Co., will erect bakery; 1 story; 168 ft. 8 in. by 128 ft.; brick; cost \$40,000.

Ga., Savannah.—Mineral Water.—Crystal Mineral Water Co., capital \$10,000, inceptd. by Raymond M. Demere, R. W. Farr, Charlton G. Ogburn and others.

Ky., Eminence.—Grain Elevator.—Henry County Elevator Co. organized with R. R. Giltner, Prest.; F. C. Giltner, V.-P.; A. G. Brewer, Secy.; let contract Brazil Hollow Brick & Tile Co. of Brazil, Ind., to build grain elevator; 6 tile reinforced bins, 12 ft. in diam. and 55 ft. high; fireproof; capacity 35,000 to 40,000 bu.; install lift, cleaning and weighing machinery; electric power; purchased equipment. (Lately noted inceptd. with \$20,000 capital.)

Ky., Middlesboro.—Mining Supplies.—Kentucky Mine Supply Co., capital \$75,000, inceptd. by H. Oelerich, Oscar Bishop and J. J. McMaye.

La., De Ridder.—Creosoting Plant.—American Creosoting Co., New York, will build creosoting plant to be operated in connection with Hudson River Lumber Co., De Ridder, and Long-Bell interests; no details determined. (Lately noted to build plant.)

La., Kenner.—Ferry and Transportation.—Kenner Ferry & Transportation Co., capital \$6000, inceptd.; Allen H. Johnson, Prest.; A. Fortier, V. P.; Salvatore Cristina, Secy.; F. D. Charbonnet, Jr., Treas.

La., Lake Charles.—Potato Curing.—Lake Charles Potato Curing Co., capital \$15,000, inceptd.; D. L. Caffery, Prest.; H. W. Lanz, V.-P.; E. N. Hazzard, Secy.-Treas.; will build potato-curing plant.

Md., Baltimore.—Bridge Razing.—City let contract to E. N. Robinson, Wilmington, Del., at \$21,675 to raze Light-St. wooden drawbridge.

Mo., St. Louis.—Laundry.—King Laundry Co. increased capital from \$15,000 to \$40,000.

N. C., Burlington.—Heating and Plumbing.—Piedmont Heating & Plumbing Co., capital \$25,000, inceptd. by Jas. A. Zachary, E. R. Moore and J. W. Pickard.

N. C., Denton.—Publishing.—Denton Herald Publishing Co., capital \$5000, inceptd. by Geo. L. Reynolds, J. L. Sixton and B. A. Peacock.

N. C., Ocean Fisheries.—Fishery.—Taylor Fisheries Co., capital \$140,000, inceptd. by D. N. Chadwick of Wilmington, N. C., A. Brooke Taylor of Norfolk, Va., I. M. Brussels of Fleeton, Va., and others.

Okla., Tulsa.—Fire-alarm System.—City voted \$1,042,500 bonds to include \$35,000 to enlarge fire-alarm system, install additional alarm boxes in business and residential section and complete equipments in West Tulsa and Kendall. John H. Simmons, Mayor. (Lately noted to vote.)

Tenn., Knoxville.—Plumbing and Heating.—Long, King & Misner Co., capital \$1000, inceptd. by E. F. Walsh, L. E. Vedder, M. E. Misner and others.

Tenn., Nashville.—Contracting.—Municipal Paving & Construction Co., capital \$20,000, inceptd. by W. G. Sessions, J. N. Stone, J. F. Slowe and others.

Tex., Higgins.—Grain Elevator.—North Texas Grain Co., capital \$10,000, inceptd. by W. M. Collins and T. H. Black of Higgins, L. L. Peters of Alva, Okla., and others.

Va., Clarksville.—Publishing.—Clarksville Publishing Co., capital \$5000, inceptd.; H. M. Harris, Prest.; R. T. Turner, Secy.

W. Va., Newell.—Kilns.—Litinski Semi-Down Draft Kiln Construction Co., capital \$5000, inceptd. by F. B. Lawrence of Newell, Geo. Litinski, Harry Bailey and G. W. Durkee of East Liverpool, Ohio, and Chas. A. Aaron of Pittsburgh, Pa.

MISCELLANEOUS FACTORIES

Ark., Gulon.—Glass.—W. C. Ball, W. T. Gunning, J. G. Wilbur and others of Webb City, Mo., are reported as interested in plan to establish glass factory.

Fla., Fort Meade.—Rice.—W. J. Reid will install rice mill; ordered machinery.

Ky., Louisville.—Chemicals.—White Chemical Co., capital \$5000, inceptd. by Emile Steinfeld, Isaac L. Steinfeld and W. G. Rork.

La., Cedar Grove.—Glass.—National Glass Co. increased capital from \$50,000 to \$100,000.

La., New Orleans.—Sugar and Molasses.—Waguespack Sugar & Molasses Co., capital \$50,000, inceptd.; Raymond Waguespack (owner Laura Plantation), Prest., St. Patricks, La.; Chas. H. Russell, V.-P., New Orleans; F. P. Waguespack, Secy.-Treas., New Orleans.

Md., Baltimore.—Paper Bags.—Columbia Paper Bag Co., 321 E. Fort Ave., will erect building; 1 story; 32x58 ft.; brick; fireproof.

Mo., Kansas City.—Vending Machines.—News Vending Machine Co., capital \$2000, inceptd. by Edward Richards, Thos. H. Payne and Jas. S. Summers.

Mo., Kansas City.—Utz Mfg. Co., capital \$300,000, inceptd. by Wm. A. Utz, R. A. Sherman and John J. Coull.

Mo., St. Louis.—Lamino Specialty Co., capital \$50,000, inceptd. by Edward A. Schubert, Chas. Wendemuth and Edgar Schneiders.

Mo., St. Louis.—Bottles.—Reliable Bottle Co., capital \$15,200, inceptd. by Jacob Fishman, Morris Schwartz and Frank J. Fishman.

Mo., St. Louis.—Surety Mfg. Co., capital \$5000, inceptd. by Leon Weinstein, Edward Hurschel and Andrew Wolf.

Mo., St. Louis.—Batteries.—Met-Sto-Bat Metallic Storage Battery Co., capital \$50,000, inceptd. by A. T. Jacobs, J. K. Sterling and R. T. Brock.

Mo., St. Joseph.—Shoes.—Battrell Shoe Co. let contract P. P. Buddy Construction Co. of St. Joseph to erect addition to shoe factory; 116x50 ft.; 7 stories; cost \$125,000.

Mo., St. Louis.—Brooms.—Anchor Broom Mfg. Co., capital \$20,000, inceptd. by J. W. Sanders, Ralph Grover and C. O. Sperry.

Mo., St. Louis.—Stone.—Algonite Stone Mfg. Co. increased capital from \$11,500 to \$100,000.

N. C., Elizabeth City.—Bottling.—Albermarle King Cola & Dixie Flip Corp., capital \$25,000, chartered by C. R. Pugh of Elizabeth City, A. Sawyer of Belcross, N. C., and R. T. Jones of Norfolk, Va.

N. C., Roxboro.—Tobacco.—Meade Harvey Co., capital \$25,000, inceptd. by J. Shield Harvey, W. D. Powell and others of Danville, Va.

Okla., Bristow.—Glass Bottles.—Bristow Glass Co., capital \$50,000, organized with W. Lee, Prest.; Joe Abraham, V.-P.; R. W. Yakish, Secy.-Treas.; H. H. Howard, Mgr.; build plant to manufacture glass bottles. (Lately noted.)

Okla., Muskogee.—Glass Bottles.—Mid-West Glass Casket Co. is reported to build addition; equip for manufacturing glass bottles.

S. C., Anderson.—Bottling.—Coca-Cola Bottling Co., capital \$5000, inceptd. by J. Helman, C. S. Millhouse, B. L. Beck and others.

Tenn., Kingsport.—Paper Pulp.—Kingsport Pulp Corp.'s capital increase provides for present plant; no immediate additions contemplated. (Lately noted increasing capitalization from \$1,050,000 to \$2,000,000.)

Tenn., Memphis.—Jorgensen-Bennett Mfg. Co., capital \$25,000, inceptd. by E. T. Bennett, J. C. Smith, John L. West and others.

Tex., Hillsboro.—Bottling and Creamery.—Hillsboro Bottling & Creamery Co., capital \$530, inceptd. by E. B. Vise, T. J. Burdette and H. S. Gabbert.

Tex., Hillsboro.—Bottling and Creamery.—Hillsboro Bottling & Creamery Co., capital \$500, inceptd. by E. B. Vise, T. J. Burdette and H. S. Gabbert.

Va., Norfolk.—Electric Fixtures.—Reliance Electric Co., capital \$50,000, inceptd.; F. W. Sharp, Prest.; W. J. Cannon, Secy.

Va., Roanoke.—Overalls.—Blue Ridge Overalls Co. increased capital from \$25,000 to \$125,000.

Va., Roanoke.—Beverages.—Shenandoah Beverage Co., capital \$25,000, inceptd.; O. A. Kerns, Prest.; C. S. Johnson, Secy.

MOTOR CARS, GARAGES, TIRES, ETC.

Ark., Fort Smith.—Motor Trucks.—Southern Motor Sales Co., capital \$10,000, inceptd. by C. C. Allison, W. A. Butterfield, L. H. Kirchman and Wm. Kirchman.

Ark., Hampton.—Garage.—C. C. Campbell & Co. will erect garage.

Ark., Hope.—Automobiles.—Auto Sales Co. will erect garage and display-room; H. J. Roebuck, Local Mgr.

D. C., Washington.—Automobiles.—D. B. Gish Mfg. Co., capital \$100,000, inceptd.; D. B. Gish (Prest. Gish Garage, 17th and U Sts. N. W.), Prest.; J. B. Kinnear, Secy.-Treas.

Ky., Lexington.—Automobiles.—Union Motor Co., capital \$25,000, inceptd. by C. H. Berryman, H. R. McEldowney and R. F. McEldowney.

Ky., Louisville.—Garage.—W. L. Kennett will erect garage; brick; cost \$35,000.

Ky., Louisville.—Garage.—Browder & Hoskins Co. will erect garage; brick and steel; cost \$25,000.

Ky., Louisville.—Garage.—Brinton B. Davis, Archt., is revising plans for construction public garage; 2 stories; cost \$40,000.

Ky., Shepherdsburg.—Automobiles.—Gatton Garage Co., capital \$2100, inceptd. by C. C. Daugherty, Frank Goldsmith and Chas. Morrison.

La., New Orleans.—Motor Trucks.—Forscher Motor Truck Mfg. Co. will erect bldg.; 150x120 ft.; brick and corrugated iron; plans by Paul Aady of New Orleans.

Md., Baltimore.—Garage.—D. H. Emory Estate will have plans prepared by Emory & Nusser, 415-16 Professional Bldg., Baltimore, for public garage at Henderson and Barclay Sts.; 1 story; 51.6x35.11 ft.

Md., Baltimore.—Garage.—W. J. Chapman Coal Co., Sharp and Lombard Sts., let contract to Clarence E. Stubbs, Equitable Bldg., Baltimore, to build garage; 1 story; 51.9x22 ft.; brick construction; fireproof; cost \$5000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore. (Lately noted to erect garage.)

Md., Emory Grove.—Garage.—Emory Grove Assn., Geo. H. Buchheimer, Prest., 1000 Rutland Ave., Baltimore, will erect 1000-ft. garage at camp grounds for use of residents of Grove.

Mo., Kansas City.—Garage.—Flynn & Bretling Motor Car Co., 4041 Broadway, will occupy garage for which Wm. Helm has let contract; 137x50 ft.; fireproof construction; cost \$32,000; C. E. Michaelis, Archt., Kansas City. (Lately noted.)

Mo., Kansas City.—Automobile Supplies.—Motor & Machine Supply Co. (subsidiary of Faeth Iron Co.) leased building to be erected by S. Z. Schutte; structure will be brick; terra-cotta trimmings; cost \$55,000; plans by A. H. Buckley of Kansas City.

Mo., St. Louis.—Motor Trucks.—One Wheel Truck Co., capital \$45,000, inceptd. by Otto F. Stifel, Louis Goodhart and B. R. Parrott.

Mo., St. Louis.—Automobiles.—Wilson Motor Car Co., capital \$15,000, inceptd. by Albert C. Wilson, G. A. Krauss and Louis W. Jacobs.

Mo., St. Louis.—Automobile Equipment.—Wielandy-Reller Automobile Equipment Co., capital \$10,000, inceptd. by Frank H. and Paul J. Wielandy and Oliver A. Reller.

Mo., St. Louis.—Tires.—Pickett Puncture-Proof Tire Co., capital \$25,000, inceptd. by Lefe Pickett, Wm. M. Winter and Buford M. Pickett.

N. C., Raleigh.—Garage.—S. Brown Shepherd will erect garage; brick; cost \$15,000.

N. C., Wilson.—Garage.—Welfare Automobile Co. and Wilson Sales Co. have consolidated; will erect garage; 6 stories; steel frame; 70x163 ft.; 68,000 sq. ft. floor space; accommodations for storage of 340 cars.

Okla., Oklahoma City.—Tires and Tubes.—Sternwear Tire & Tube Co., capital \$60,000, inceptd. by C. F. Anderson, F. H. Grant and Wm. MacRae.

Okla., Tulsa.—Garage.—B. M. Gessel will erect garage at 1206 S. Main St.; 2 stories; brick; cost \$35,000.

Okla., Tulsa.—Garage.—City voted \$1,042,500 bonds, of which \$17,500 will be expended to erect garage and warehouse; John H. Simmons, Mayor. (Lately noted to vote.)

Okla., Tulsa.—Garage.—J. R. Sharp will erect garage at 317 E. Tenth St.; 2 stories; cost \$7000.

S. C., Aiken.—Garage.—John A. May, Prop. Ford Agency, will remodel garage; 2 stories; plate-glass front; concrete drive; plans by G. Lloyd Preacher of Augusta, Ga.

S. C., Charleston.—Motor Trucks.—Southern Truck Co., capital \$5000, inceptd. by J. A. Patia and H. Pinosky.

Tenn., Chattanooga.—Automobiles.—Post Bus Line, capital \$5000, inceptd. by H. W. Steiner, E. R. Fuller, C. E. Springfield and others.

Tenn., Nashville.—Automobile Supplies.—Auto Supply Co. increased capital from \$5000 to \$10,000.

Tex., Dallas.—Automobiles.—American Motors Co., capital \$50,000, inceptd. by H. M. Russell, W. R. Harris and J. Hart Willis.

Tex., Melvin—Garage.—G. Noyes let contract J. F. Drew of Lometa, Tex., to erect garage to replace burned structure.

Va., Richmond.—Davis Land Co. will erect 2 garages; brick.

Va., Richmond—Garage.—W. B. Florsheim will repair brick garage; cost \$4500.

W. Va., Wheeling—Automobiles.—Capitol Car Co., capital \$25,000, incptd. by Geo. D. Burley, Henry J. Kiel, Harry L. Hesse and others.

W. Va., Clarksburg—Tires.—Clarksburg Tire Co., capital \$25,000, incptd. by Wade H. Garret, Freda Starkey and Agnes Garret.

RAILWAY SHOPS, TERMINALS ROUNDHOUSES, ETC.

Mo., Trenton.—Chicago, Rock Island & Pacific Ry., C. A. Morse, Chief Engr., Chicago, Ill., let contract Railroad Water & Coal Handling Co. to construct wooden coal-station of 500-tons capacity.

ROAD AND STREET WORK

Ala., Abbeville.—Henry County will grade and surface with sand-clay road between Headland and Browns Cross Rds.; County Comms. receive bids until August 13; W. S. Keller, State Highway Engr., Montgomery, Ala. (See Machinery Wanted—Road Construction.)

Ala., Andalusia.—Covington County will grade, drain and surface with sand-clay 4% ml. of road from Escambia county line east; Board of Revenue receives bids until Aug. 13; J. M. Garrett, County Engr. (See Machinery Wanted—Road Construction.)

Ark., Des Arc.—Prairie County Comms. will build 10 ml. macadam highway costing \$59,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Des Arc.—Prairie County Road Improvement Dist. No. 1, J. W. Watson, Prest., let contract J. G. Galloway of Cordova, Tenn., at \$92,000 to construct road from Des Arc to Woodruff County line, 9.3 ml.; gravel with bituminous surface. (Lately noted inviting bids.)

Ark., Evening Shade.—Sharp County Commissioners have plans by State Highway Engr., Little Rock, for dirt road in Dist. No. 1 from Strawberry River to Cave City; length 14 ml.

Ark., Elkins.—Cleveland County Comms. will construct roads in Dist. No. 1 from Jefferson county line south to Kingsland and Rison, 22 ml. gravel; cost \$126,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Fort Smith.—Sebastian County Commissioners will build 15 ml. shale highway costing \$75,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Harrisburg.—Poinsett County Commissioners will build 9 ml. macadam highway costing \$68,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Jonesboro.—Craighead County Commissioners will build 23 ml. macadam highway costing \$148,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Lonoke.—Lonoke County Comms. will build 13 ml. highway east of Carlisle; link of Little Rock-Memphis highway; macadam construction; cost \$36,000; plans and specifications by State Highway Engr., Little Rock.

Ark., Pocahontas.—Randolph County Commissioners have plans by State Highway Engr., Little Rock, for road from Pocahontas to Lesterville, Shorum and O'Kean; Dist. No. 1; 42 ml.; macadam.

Ark., Walnut Ridge.—Lawrence County, Road Improvement Dist. No. 3, will construct 5.78 ml. macadam road; 11,317 tons crushed stone; 20,000 cu. yds. grading; 6.41 ml. fencing; 190 lin. ft. steel bridges; 624 lin. ft. pipe culverts, etc.; District Comms., J. R. Spence, Prest., receives bids until Aug. 2; F. A. Pritchett, Engr., Walnut Ridge. (See Machinery Wanted—Road Construction.)

Fla., Clearwater Beach.—Clearwater Island Bridge Co., E. W. Parker, Prest., 408 Curry Bldg., Tampa, will pave streets; 3 ml.; shell; cost \$10,000; Contr., Tampa Sand & Shell Co., Tampa. (Lately noted as Clearwater Beach Co.)

Fla., Miami.—Dade County votes August 11 on \$140,000 bonds to construct roads and bridges, latter to include structure across East Coast Canal and across Snake Creek, near Fulford; E. D. V. Burr, Chrmn. County Comms.

Fla., Palm Beach.—Town votes July 31 on \$50,000 bonds to improve streets and sewer

system, purchase fire equipment, build incinerator and erect town hall. Address Town Clerk.

Fla., Panama City.—Bay County Comms. let contract T. B. Yonge to construct roads; will soon let contracts for additional roads; total cost \$375,000; E. V. Camp, Consult. and Supervising Engr., Box 436, Panama City. (Lately noted inviting bids.)

Fla., Tampa.—Hillsborough County, Citrus Park Special Road and Bridge Dist., will construct hard-surfaced roads; bids until August 14; Jas. G. Yeats, Chrmn. County Comms. (See Machinery Wanted—Road Construction.)

Fla., Tampa.—Hillsborough County, Winmauma Special Road and Bridge Dist., will construct hard-surfaced roads; bids until August 14; Jas. G. Yeats, Chrmn. County Comms. (See Machinery Wanted—Road Construction.)

Ga., Montezuma.—City will pave 12,000 sq. yds. with vitrified brick, cement concrete, bituminous concrete, bituminous macadam or creosoted wood blocks, with necessary granite or concrete curbing; bids until August 15; plans and specifications at office City Clerk and of Arthur Pew, Consult. Engr., Forsyth Bldg., Atlanta; Jas. Harrison, City Clerk. (See Machinery Wanted—Paving.)

Ky., Paducah.—McCracken County will grade and gravel Section 3 of Ogden's Landing Rd. and improve 1.1 ml. of Mayfield Inter-county road with tarvia macadam; Ogden's Landing Rd. will require: Excavation, 26,540 cu. yds.; gravel, 9085 cu. yds.; concrete, 857 cu. yds.; bids until July 21; R. H. Young, Civil Engr.; Gus G. Singleton, County Clerk.

Ky., Williamsburg.—City will reconstruct Main St. between river bridge and railroad crossing at depot; grading, curbing and resurfacing with Tarvia macadam; C. G. Ellison, Mayor, receives bids until July 23. (See Machinery Wanted—Paving.)

Ky., Winchester.—Clark County Comms. let contract to Brent Haggard, Winchester, for 6 ml. water-bound macadam road construction.

Md., Admiral.—Quartermaster's Dept. let contract Smith, Houser & M. F. McIsaacs of New York to build army cantonment; improvements to include roads throughout camp site; Col. I. W. Littell, Washington, D. C., is in general charge. (See Water-works.)

Md., Baltimore.—City will grade and pave with cement concrete alleys listed in Private Alley Contracts Nos. 40, 41, 45 and 46; bids until July 25; R. M. Cooksey, Highways Engr., City Hall. (See Machinery Wanted—Paving.)

Miss., Indianola.—Sunflower County, Dist. No. 5, will construct 25 ml. gravel road; Road Comms. receive bids until August 7; H. S. Stansel, Engr., Ruleville, Miss.; John W. Johnson, Chancery Clerk. (See Machinery Wanted—Road Construction.)

N. C., Mocksville.—Town will pave street and sidewalks on Depot St., sidewalks on Main St., etc.; issue \$12,000 bonds. V. E. Swain, Mayor.

N. C., South Biltmore.—Town let contract E. T. Belote of Asheville to grade and pave street with concrete, 2130 lin. ft.; cost \$7500; Robt. S. Brown, Engr., Asheville; F. A. Walton, Mayor, 14½ Biltmore Ave. (Lately noted inviting bids.)

Okla., Oklahoma City.—South Oklahoma Town Co., A. N. Wheeler, Gen. Mgr., 2309 Exchange Ave., will construct 5000 yds. asphalt paving with 4-in. concrete base and 1½-in. top; 10,000 yds. 5-in. macadam treated with ½ gal. liquid asphalt to sq. yd. (Lately noted planning to construct cement sidewalks and street paving.)

Okla., Sapulpa.—Creek County Comms. plan to expend \$300,000 this year to construct and improve roads and bridges; build 2 steel and concrete bridges costing \$65,000 on central route of Ozark Trail, between Kellyville and Bristow; 100 and 50-ft. span, respectively; concrete floors; equipment and machinery for road work to cost \$10,000.

Okla., Tulsa.—City voted \$1,042,500 bonds, of which \$80,000 will be expended to construct heavy traffic roadway from Main St. to north approach of new county bridge; John H. Simmons, Mayor. (Lately noted to vote.)

S. C., Charleston.—City will pave with sheet asphalt Rutledge Ave., cost \$33,781.20; Mill St., cost \$3847.64; Montague St., cost \$10,162.76. J. H. Dingle, City Engr.

Tenn., Chattanooga.—Tennessee River Bridge Co., Thos. F. King, Chrmn., will pave with asphalt and asphaltic concrete Market St. bridge from 1st to Frazier St., exclusive of bascule span, now paved; bids

until July 26. (See Machinery Wanted—Paving.)

Tenn., Cleveland.—City will pave 2 ml. of streets with asphalt; 5-in. concrete base; issue \$150,000 bonds. Address The Mayor.

Tenn., Maryville.—City plans street paving to cost \$50,000; R. C. Huston, Engr., Maryville; Sam Everett, Mayor.

Tenn., Maryville.—City accepted plans and specifications for paving Main St. from Norwood St. west to corporate limits; 6000 cu. yds. excavation, 22,000 sq. yds. paving and 12,000 lin. ft. curb and gutter; pave with asphalt, asphaltic concrete, brick or wood block, as may be determined; bids until July 26; plans, blank forms, etc., obtainable from R. C. Huston, Consult. Engr.; S. M. Everett, Mayor. (See Machinery Wanted—Paving.)

Tenn., Mountain City.—Johnson County Comms. let contract to Charlotte (N. C.) company to construct 34 ml. pike road from State line, near Damascus, via Mountain City to Butler at Carter county line; C. M. Dulaney, Engr., Mountain City. (Lately noted inviting bids.)

Tex., Canadian.—Hemphill County voted \$150,000 bonds to construct roads. Address County Comms.

Tex., Dallas.—Dallas County Comms. let contract Vibrolithic Construction Co. of Dallas for concrete paving on Dallas-Fort Worth Rd., from west end of Commerce St. viaduct to Obenchain Hill in West Dallas, 1½ ml.

Tex., Vega.—Oldham County will construct 50 ml. road, including grading and bridges; County Comms. receive bids until July 23; Hess & Skinner, Engrs., Dallas, Tex.; Wm. Balfour, County Judge. (See Machinery Wanted—Road Construction.)

Va., Lynchburg.—City will construct rubble stone roadway on Campbell Courthouse Turnpike; also granolithic sidewalks; Council Com. on Streets receives bids until July 21; H. L. Shaner, City Engr. (See Machinery Wanted—Paving.)

Va., Staunton.—City will construct 3400 sq. yds. paving on Middlebrook Ave. and 650 sq. yds. on South New St.; vitrified block; bids until July 20; S. D. Holsinger, Gen. Mgr., Crowle Bldg. (See Machinery Wanted—Paving.)

W. Va., Fayetteville.—Fayette County Court, R. J. Stegall, Clerk, let contract to St. Lawrence Construction Co., Albany, N. Y., to build 14-ml. highway in Falls Dist. of Fayette county. (Lately invited bids.)

W. Va., Huntington.—City will grade, curb and pave sections of Fifth and Sixth Sts.; City Comms. receive bids until July 25; O. H. Wells, Commr. Streets, etc.; A. B. Maupin, City Engr. (See Machinery Wanted—Paving.)

W. Va., Williamson.—Mingo County will construct 35-ml. earth road; 3 sections; County Court receives bids until August 4; Blake Taylor, County Road Engr. (See Machinery Wanted—Road Construction.)

SEWER CONSTRUCTION

D. C., Washington.—District Comms., 509 District Bldg., will construct 600 lin. ft. 3 ft. 6 in. diam. masonry sewer; bids until July 20. (See Machinery Wanted—Sewer Construction.)

Fla., Palm Beach.—Town votes July 31 on \$50,000 bonds to improve sewer system, etc. Address Town Clerk. (See Road and Street Work.)

Ga., Atlanta.—Arthur Tufts, Candler Annex, Atlanta (contractor for army cantonment at Silver Lake) let contract D. A. Farrell & Co., Atlanta, for plumbing and sanitary sewers, including shower-bath system; lateral sewers will extend from trunk sewers to various buildings. (City lately noted to construct sewer system to cantonment.)

Md., Admiral.—Quartermaster's Dept. let contract Smith, Houser & M. F. McIsaacs of New York to build army cantonment; improvements to include 10 ml. of sewers; Col. I. W. Littell, Washington, D. C., is in general charge. (See Water-works.)

Md., Cumberland.—S. Diescher & Sons, Pittsburgh; Paul Galer, Chief Engr., Cumberland, let contract to Yang Construction Co., Cumberland, to construct sewer system and intake from Potomac River; work to include 5000 cu. yds. excavation and 3200 yds. concrete construction. This system to serve 2,250,000 plant (recently detailed under Motor Cars, Garages, Tires, etc.) being built by Kelly-Springfield Tire Co., Akron, Ohio.

Okla., Frederick.—City will construct 3200 lin. ft. vitrified salt-glazed sewer pipe, man-holes, catch-basins, trenching and pipe laying; D. W. Womack, City Clerk, receives

bids until July 24. (See Machinery Wanted—Sewer Construction.)

Okla., Oklahoma City.—South Oklahoma Town Co., A. M. Wheeler, Gen. Mgr., 2309 Exchange Ave., will construct 1300 ft. 10-in. sewer; 2500 ft. 6 and 8-in. laterals; all to have 1 or 2 Y's for each 43-ft. lot. (Lately noted planning to construct sewers.)

Okla., Tulsa.—City voted \$1,042,500 bonds, of which \$80,000 will be expended to construct sanitary and storm sewers in West Tulsa, Kendall and other additions; John H. Simmons, Mayor. (Lately noted to vote.)

Okla., Tulsa.—City will construct sanitary sub-main sewer as follows: 8-in. sewer costing \$3800 from present system easterly in Wakefield Addition for outlet system for part of Hillcrest Addition; 12-in. sewer east from Lewis Ave., north in Kendall Village and serving as outlet to northeasterly part of Hillcrest Addition; 12-in. sewer costing \$7300 from Rockford to Zulus as outlet to Hillcrest Addition; City Comms., City Hall, receive bids until July 24; H. H. Wyss, City Engr. (See Machinery Wanted—Sewer Construction.)

S. C., Columbia.—Quartermaster-General's Department let contract Tucker & Laxton, Inc., Charlotte, N. C., to construct sewers, water-works, plumbing and electric wiring for cantonment at Columbia; estimated cost \$400,000; Hardaway Contracting Co. of Columbia, Ga., has general contract. (Lately incorrectly noted.)

Tenn., Chattanooga.—City let contract Noll Construction Co., Chattanooga, at \$11,001.28 to construct storm-water sewer in Orange Grove Dist.; E. D. Bass, Commr. Dept. of Streets and Sewers. (Lately noted inviting bids.)

Tenn., Knoxville.—City will extend sanitary sewer; City Com. receives bids until July 24; J. B. McCalla, City Engr.; John W. Plenniken, Commr. Streets and Public Improvements. (See Machinery Wanted—Sewer Construction.)

Tenn., Maryville.—City plans sewer and disposal-plant construction; R. C. Huston, Engr., Maryville; Sam Everett, Mayor.

Tenn., Maryville.—City accepted plans and specifications for constructing 12 miles of sanitary sewers; to include 40,000 ft. 8-in., 8000 ft. 10-in., 5000 ft. 6-in., 4000 ft. 12-in., and 3000 ft. 15-in. vitrified sewer pipe; also include 125 manhole covers, 20 tons cast iron pipe, 45 siphons for flush tanks, 1000 lbs. Portland cement, 150,000 sewer bricks, 40,000 ft. lumber, etc.; bids until July 26; plans, blank forms, etc., obtainable from R. C. Huston, Consult. Engr.; S. M. Everett, Mayor; city voted \$70,000 bonds for sewer system. (See Machinery Wanted—Sewers.)

Tex., Waxahachie.—City has plans and specifications for constructing sewage-treatment plant and outfall line to connect with present sewerage system; bids until July 23; blank forms, etc., obtainable (for \$15 deposit) from Will D. Hines, City Secy., and M. Griffin O'Neil & Sons, Consult. Engrs., Praetorian Bldg., Dallas, Tex. (See Machinery Wanted—Sewage-treatment Plant.)

W. Va., Huntington.—City will construct relief sewer in south side; 890 ft. 15-in. tile and 845 ft. 12-in. tile; City Comms. receive bids until July 30; A. B. Maupin, City Engr.; O. H. Wells, Commr. Streets, Sewers, etc. (See Machinery Wanted—Sewer Construction.)

SHIPBUILDING PLANTS

Ala., Mobile.—Rolf Seeberg, Mobile and New Orleans, plans organization \$12,000,000 company to build plant for constructing and repairing ships; 500-acre site on Dog River, 2 ml. from Mobile; improvements to include drydock to accommodate 10,000-ton vessels, smaller drydock, beddings for building steel ships up to 10,000 tons burden, foundry, machine shop, etc.; products to include small gasoline engines and light water craft, etc.; wires Manufacturers Record; Will give full information when plans mature. (Rolf Seeberg noted in May as proposing to construct shipbuilding plant and representing Norwegian capitalists.)

Fla., St. Petersburg.—Avery & Roberts (A. P. Avery and Geo. L. Roberts) advise Manufacturers Record: Equipped to build boats of any size up to 120 ft. long; installed machinery and ways; electric power. (Geo. L. Roberts, Sarasota, Fla., lately noted to establish shipbuilding plant.)

Fla., Tampa.—Tampa Dock Co. organized with \$1,000,000 capitalization; A. J. Knight, Prest.; Elsi Knight, Treas.; J. C. Vinson, Secy.; J. L. McGucken, Gen. Mgr.; T. A. McGucken, Supt. of Construction; build shipyards; site on Ybor Channel; construct wooden ships and probably later equip for building steel vessels; invest \$50,000 or more

for initial plant; will include 4 ways, each 40 ft. long and requiring 2700 piles, 50x50-ft. machine shop of frame construction, 195x50-ft. frame building with mold loft on second floor and fabricating plant, 35x35-ft. boiler-house of brick construction, 390-ft. finishing dock, etc.; expenditure includes \$24,000 for plant machinery. (Lately noted to build shipyards, including ways for four 286-ft. ships, having 75-acre plant site with 2500-ft. frontage on Ybor estuary; same as L. E. Knight and McGucken & Iyer, noted in May as to construct shipbuilding plant.)

Md., Baltimore.—Howard E. Crook Co., Howard E. Crook, Pres., 28 Light St., increased capitalization from \$120,000 to \$250,000; utilize marine department of McLean Contracting Co.; now manufactures and installs boilers, piping systems, etc.; purchased land, including 900 ft. water-front site; plans to construct shipbuilding plant, including marine ways and machine shop; begin with Government contract for 6 wooden hulls; future plans provide for building facilities to construct steel vessels (Howard E. Crook lately noted interested in plan to establish shipyards.)

Md., Baltimore.—Baltimore Dry Docks & Shipbuilding Co. advises Manufacturers Record: Additional shipyard will cost \$3,000,000, exclusive of land; contract to Belmont Iron Works, Philadelphia, for buildings amounts to \$3,000,000; improvement plans provide for following buildings: Boiler shop, 110x340 ft.; outfitting shop, 70x400 ft.; ship shop, 60x340 ft.; layout shop, 60x360 ft.; mold loft over layout shop, 80x360 ft.; fabricating shop, 160x400 ft.; assembly shop, 80x400 ft.; store building, 50x200 ft.; three-story office building will be 50x150 ft.; will construct 4 shipbuilding berths. (Supplementing recent reports on this additional plant.)

Miss., Moss Point.—Dantzier Shipbuilding & Dry Docks Co. Incptd. with \$100,000 capital by A. F. Dantzier of Moss Point, L. N. Dantzier of Biloxi, Miss.; G. B. Dantzier of Gulfport, Miss., and J. L. Dantzier of New Orleans; build shipyard lately noted planned by Dantzier Lumber Co. (L. N. Dantzier Lumber Co. noted in June as to construct shipbuilding plant for 1250 to 1500-ton wooden vessels for its own use; site at Grifins Point, on east bank of East Pascagoula River, 6½ mi. north of river mouth and ½ mi. south of confluence of East Pascagoula and Escatawpa rivers; land is elevated plateau 15 ft. above river level; contracted for artesian well and partially for shipyard machinery.)

Miss., Pascagoula.—Kelly-Atchison Co., Chicago, will not build shipyards. (Recent report erroneous.)

Miss., Pascagoula.—Kelly-Atchison Construction Co., Chicago, has option on large river frontage, is reported to build shipyards for constructing wood and steel vessels.

Tex., Beaumont.—Beaumont Shipbuilding & Dry Dock Co. organized; J. W. Link, Pres.; Houston; C. O. Yoakum, V.-P. and Gen. Mgr.; construct shipbuilding plant on Island Park; plans include 250x50-ft. mill building and mold loft, 40x25-ft. blacksmith and repair shop, 30x20-ft. paint-storage building, 40x30-ft. oakum-storage house, 40x25-ft. power-house, 100x50-ft. warehouse for heavy machinery and other materials; build ships of long-leaf yellow pine; largest vessel of 4000 tons capacity; build ships for own use and lumber manufacturing interests; also build 2500-ton ships for Government; within few months plan to add dry dock. (John H. Kirby and associates previously mentioned to organize shipbuilding company, etc.)

Tex., Houston.—Midland Bridge Co., 509 Midland Bldg., Kansas City, Mo., advises Manufacturers Record: Will establish shipyards on ship channel; provide facilities to build six hulls at one time. (Lately noted to build shipyards and having plant site including 1000-ft. water frontage.)

Tex., Houston.—Pan-American Trading Co. determined details for shipbuilding plant; B. N. Garrett, Pres. (also Pres. Houston Bank & Trust Co.), advises Manufacturers Record: Pan-American corporation has capitalization of \$10,000,000; recently acquired 350 acres 9 mi. south of Houston; 10 mi. of water front; 5 mi. extends along north shore of Houston & Galveston ship channel; constructing shipbuilding plant; facilities to include 6 shipways. (Lately noted to establish yards, etc.)

Va., Richmond.—Old Dominion Shipbuilding & Aircraft Mfg. Co., capital \$1,000,000, Incptd.; Robt. S. Hudgins, Pres.; Chas. S. Barrow, V.-P.; C. L. Durlon, Treas.; Jas. E. Cuthbert, Secy.

TELEPHONE SYSTEMS

Ky., Hazel Green.—Lacy Creek Telephone Co. Incptd. by Frank Sample, Green Trimble and S. S. Rose.

Md., Elkton.—Chesapeake & Potomac Telephone Co. (main office, 5 Light St., Baltimore) is having plans prepared for exchange.

Mo., Grant City.—Grant City Telephone Corp., capital \$4000, chartered by John Andrews, J. J. Baker, J. F. Cloud and others.

Tex., Huntington.—Huntington Telephone Co., capital \$4000, Incptd. by R. P. McKewen, W. T. Stewart, J. W. Buckner and others.

TEXTILE MILLS

N. C., Durham.—Hosliery.—Banner Knitting Mills will build additions to triple capacity. N. C., Youngsville.—Hosliery.—Banner Knitting Mills, Durham, N. C., is reported to build hosliery-knitting mill.

Okla., Oklahoma City.—South Oklahoma Town Co., A. N. Wheeler, Gen. Mgr., 2309 Exchange Ave., will lay 3000 to 5000 ft. 6-in. cast-iron water main and 3000 to 4000 ft. 2-in. water pipe; with cross every 45 ft. (Lately noted planning to extend water mains.)

Okla., Ryan.—City votes July 27 on \$16,000 bonds to extend water-works. Address The Mayor.

S. C., Anderson.—Hosliery.—Hetrick Hosliery Mills, Walhalla, S. C., will occupy 115x52½x52½-ft. mill building; reinforced concrete walls; floors and walls laid in concrete; wooden roof timbers; to be owned by R. T. Jaynes of Walhalla; let building contract to Otto Kaufman of Walhalla. (Lately noted to establish branch plant.)

S. C., Charleston.—Cotton Fabrics.—Charleston Mills Co. chartered with \$75,000 capital by Julius H. Weil and Chas. D. Groat; has building; install machinery to manufacture yarn and finished fabrics; ordered machinery.

Tenn., Shelbyville.—Cotton Products.—Columbia Cotton Mills Incptd. with \$125,000 capital by John D. Hutton, W. J. McGill and others.

Tenn., Oakdale.—Hosliery.—Oakley Hosliery Mill (lately noted Incptd. with \$10,000 capital by S. N. Oakley and others) let contract for 100x30-ft. frame building costing \$1000; install 40 knitting machines with 20 H. P. electric drive; daily capacity 200 doz. pr. hose. (See Machinery Wanted—Knitting Machinery.)

W. Va., Martinsburg.—Hosliery.—Interwoven Mills plan \$30,000 expenditure to build 3-story brick addition and install new machinery.

WATER-WORKS

Ala., Montgomery.—City Com. will construct 12,000 ft. 12-in. water main to center of site for cantonment; day labor.

Ala., Montgomery.—City Com. will construct 2½-mi. extension of water mains to Vandiver Park and furnish about 2,000,000 gals. water daily to proposed divisional military camp; appropriated \$30,000.

Ark., Little Rock.—Quartermaster's Dept., Major John R. Fordyce, Constructing Quartermaster, let contract Arkansas Water Co. of Little Rock to supply water to Twelfth Division Cantonment near Little Rock; construct pipe line to reservation and pump water into reservoir with capacity of 1,000,000 gals. (Lately noted.)

Ark., Winchester.—City will install larger pumping plant at municipal well. Address The Mayor.

Fla., Clearwater Beach.—Clearwater Island Bridge Co., E. W. Parker, Pres., 408 Curry Bldg., Tampa, will construct water-works; elevated tank at present; reservoir contemplated; install engine and pump costing \$300; total cost \$1000. (Lately noted as Clearwater Beach Co.)

Ga., Atlanta.—Arthur Tufts, Candler Annex, Atlanta (contractor for army cantonment at Silver Lake) let contract D. A. Farrell & Co., Atlanta, to construct water system. (City lately noted to construct additional water facilities to supply cantonment.)

Md., Cumberland.—City will construct concrete conduit in Dry Run at German St.; work embraces 250-ft. concrete conduit, 2200 sq. ft. concrete bottom for present conduit, etc.; bids until July 23; Ralph L. Rizer, City Engr. (See Machinery Wanted—Conduit construction.)

N. C., Mocksville.—City will issue bonds for electric-light plant. V. E. Swain, Mayor.

Md., Admiral.—Quartermaster's Dept. let contract Smith, Houser & M. F. McIsaacs of

New York to build army cantonment, to include 4500-acre maneuvering field and accommodations for 38,000 men; improvements to include water system, supply to be obtained from Little Patuxent River; plans to construct dam across river at Welsh bridge and install filter and pumping plants; pump water to 4 reservoirs one-half mi. distant; drill artesian wells for construction needs and emergency supply; daily supply 2,500,000 gals.; also construct 10 mi. of sewers and roads throughout camp; Col. I. W. Littell, Washington, D. C., is in general charge.

Okla., Tulsa.—City voted \$1,042,500 bonds, of which \$660,000 will be expended for water-works extension and improvements, including water belt line around business section of Tulsa proper, ample water facilities for West Tulsa and improvements in Kendall; belt line to be mainly 24-in. pipe; also includes additional water plugs, submains and extensions toward Kendall and river-crossing of West Tulsa main, which probably will be placed in conduit built in new county bridge; Stevens & Stiles, Const. Engrs., Kansas City, Mo.; John H. Simmons, Mayor. (Lately noted to vote.)

S. C., Columbia.—Quartermaster-General's Department let contract Tucker & Laxton, Inc., Charlotte, N. C., for water-works, plumbing, sewers and electric wiring for cantonment at Columbia; estimated cost \$400,000; Hardaway Contracting Co. of Columbia, Ga., has general contract. (Lately incorrectly noted.)

S. C., Greenville.—Paris Mountain Water Co. will construct water-works to supply 1,500,000 gals. water to army training camp.

S. C., Greenville.—Henry T. Mills, C. S. Webb and others are interested in plan to organize company with \$200,000 capital to construct water-works capable of pumping 2,000,000 gals. water daily.

Tex., Mineral Wells.—City votes July 30 on issuing bonds to construct water-works, including lake, filter and 5-mi. pipe line; W. W. McClenon, City Engr.

Tex., Port Lavaca.—County Court is prepared to grant franchise for water-works and electric-light plant.

WOODWORKING PLANTS

Ala., Montgomery.—Toys.—Montgomery Toy Mfg. Co. organized; Emory S. Egge, Pres.-Mgr.; Jno. R. Miller, V.-P.; purchased 3-story 140x80-ft. building; install wood-working machinery; manufacture toys. (Lately noted, under Miscellaneous Factories, as Incptd. with \$20,000 capital.)

Ga., Savannah.—Veneer.—Diamond Match Co., New York and Chicago, will probably lease site and build experimental plant; details not decided.

La., Jonesville.—Veneer.—Jonesville Lumber & Veneer Co. organized with A. W. Stewart, Pres.; B. Y. Lewis, V.-P.; J. N. Warner, Secy.; J. W. Lewis, Treas. and Gen. Mgr.; build hardwood mill; daily capacity 20,000 ft.

Miss., Natchez.—Boxes.—National Box Co. of Chicago is reported to establish \$75,000 plant.

N. C., Asheville.—Wooden Nails.—J. W. L. Arthur, 105 Ashland Ave., will establish plant to manufacture locust-wood nails for ship construction; install cut-off saws, rip saws, turning machines, etc.; daily capacity 10,000 locust-tree nails; also manufacture oak, hickory and rock maple nails.

N. C., Burnsville.—Wooden Nails.—J. W. L. Arthur, 105 Ashland Ave., Asheville, N. C., will establish wooden tree-nail factory. (See Asheville, N. C.)

Tenn., Cleveland.—Chairs.—Cleveland Chair Co. increased capital from \$50,000 to \$100,000.

FIRE DAMAGE

Ala., Talladega.—Ullman Bros.' store; estimated loss \$50,000.

Ark., Lawson.—Postoffice; B. B. Green's store and dwelling; stores of A. C. Chaney and Williams & McCall; Henry Trull's and C. H. Williams' dwellings; loss \$50,000.

Fla., Jacksonville.—J. T. Pope's residence, loss \$5000; S. R. Pearson's residence, owned by Mrs. Franklin.

Fla., Sarasota.—H. J. Peters' country residence, 7 mi. from Sarasota; loss \$4500.

Fla., Williston.—Hotel owned by Mrs. J. R. Epperson; loss \$3000.

Ga., Atlanta.—J. W. Jenkins' residence at East Lake.

Ga., Augusta.—Augusta Cab & Transfer Co.'s livery stables; loss \$5000 to \$6000.

Mo., Mt. Washington.—McGrath Grocery Co.'s store; Maderra Confectionery Co.'s store; loss \$15,000.

Mo., Butler.—Newlon Bros.' garage; loss \$50,000.

Mo., Caruthersville.—L. B. Holt's store, owned by Eli Shamski; loss \$10,000.

Mo., Joplin.—Mrs. Flossie Ray's cigar factory at 1910 Main St.

Okla., Cache.—A. E. Petty's store; Telephone Exchange; A. J. Clingun's produce house; J. B. Hill's garage and blacksmith shop; J. W. Webb's livery barn; West House; Fullbright's Restaurant; W. W. Thomas' icehouse; Sabin Livery Co.'s barn; loss \$40,000.

Okla., Tulsa.—Sand Springs Ry. Co.'s car barns; loss \$25,000.

Tenn., Alpha.—Arthur Skeen's store and several outbuildings; loss \$3000.

Tenn., Murfreesboro.—J. M. Naylor's residence; loss \$5000.

Tex., Austin.—Building occupied by Marchison Lee Grocery Co., Austin Trades Council and Austin Typographical Union.

Tex., Barstow.—Slack Brothers' garage; G. Rule's store; P. A. Black & Co.'s store; loss \$30,000.

Tex., Belton.—Dr. W. F. Flewellen's residence; loss \$5000.

Tex., Bremond.—E. W. Roberts' building; loss \$2000; A. Sowman's building and stock; loss \$13,500; Joe Rumble's building; loss \$3000.

Tex., Cleburne.—Cleburne Roller Mills; S. M. Pool, Supt.; loss on plant \$20,000.

Tex., Deweyville.—Sabine Tram Co.'s double-band saw mill; loss \$100,000.

Tex., Denton.—Williams Store, owned by W. R. Graham, Muskogee, Okla.; loss \$1000. Tex., Giddings.—San Antonio & Aransas Pass Ry.'s freight depot; G. D. Slagly, Supvr. B. and B., Yoakum, Tex.

Tex., Grand Prairie.—Grand Prairie Mfg. Co.'s refrigerator and kitchen cabinet factory; loss \$125,000.

Tex., Harlingen.—Hill Sugar Mills; reported loss \$250,000.

Tex., Mexia.—Farmers' Union warehouse and store; loss \$10,000.

Tex., San Antonio.—J. Oppenheimer & Co.'s building; loss \$200,000.

Tex., Vernon.—Kell Milling Co.'s grain elevator, J. A. Birdsong, Mgr.; loss \$9000.

Va., Richmond.—Southern Briquette Coal Co.'s plant; loss \$10,000 to \$15,000.

W. Va., Charleston.—John Anderson's storeroom and dwelling near Charleston.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ark., Little Rock.—S. R. Byrly will erect brick-veneer apartment-house; cost \$7000.

D. C., Washington.—George N. Saegmuller has plans by A. Goerner, Miami, Fla., for apartment-house at Maryland Ave. and 1st St.; twenty 3 to 5-room suites; fireproof; elevators; cost \$250,000; also erecting apartment-house adjoining to cost about \$500,000.

Ky., Louisville.—Hawthorne Corp. will erect apartment-house; 60 suites; 3 stories and basement; face brick; non-fireproof construction; cost \$150,000; Joseph & Joseph, Architects, Atherton Bldg., Louisville.

Md., Baltimore.—O. B. Pyle, Sr., 111 W. 28th St., will convert building at Charles

St. and Lafayette Ave. into stores and apartments. (See Stores.)

Mo., Kansas City.—W. G. Wrenn will erect 3-story 6-apartment flat; cost \$20,000.

Tex., Dallas.—A. Spangh will erect apartment-house; 2 stories; 20 rooms; brick veneer; cost about \$5000.

ASSOCIATION AND FRATERNAL

Ala., Auburn.—Dr. C. S. Yarbrough is having plans prepared for building for lodge-rooms, etc. (See Government and State.)

Ark., Little Rock.—Y. M. C. A. selected sites, 300 to 400 ft., for six buildings at army cantonment; provide athletic field 750 to 850

ft.; also erect auditorium to seat 3500; Chas. Kurtaltz and A. B. Nicholls, Secretaries.

Ky., Louisville.—Lodge 820, A. F. & A. M., is receiving bids through B. O. Ford, Chrmn. Building Com., Louisville Trust Bldg., to erect lodge building; 2 stories and basement; 37x116 ft.; cost \$25,000; A. R. Smith and W. Earl Otis, Archts., Norton Bldg., Louisville.

Okla., Tulsa.—Tulsa Labor Union will erect 4-story building.

Tex., El Paso.—Scottish Rite Benevolent Assn., receives bids until Sept. 10 (extended date) to erect lodge building; fireproof; composition roof; reinforced concrete floors; steam heat; cost \$150,000; Hubbell & Greene, Archts., Dallas. (Lately noted.)

Tex., Fort Worth.—Nobles of Mystic Shrine, A. F. and A. M., will erect Mosiah Temple Mosque at Reynolds, on Lake Worth; plans call for 2 stories and basement; 20-ft. veranda; dance, dining and reception rooms; 2 towers; initial cost \$25,000; plans contemplate additions each year, making ultimate cost \$100,000; George Stapleton, Amarillo, Tex.; Elmer Renfro, O. K. Shannon and others, Com.; completion of first unit by Nov. 1.

Tex., Slaton.—A. F. & A. M. are having plans prepared by M. L. Waller & Co., 414 Dan Waggoner Bldg., Fort Worth, for lodge building.

Tex., Leon Springs.—Y. M. C. A. will erect 2 additional army association buildings at Camp Funston; H. W. Chaffee, Dist. Secy., San Antonio.

Tex., Waco.—Y. M. C. A. will erect 5 buildings at army camp; frame; cost \$4000 each, exclusive of fixtures.

Va., Lynchburg.—Y. W. C. A. has plans by Stanhope S. Johnson, Lynchburg, for building; Fisklock tapestry brick; stone trimmings; Barrett specification roof; terrazzo, tile and wood floors; cost \$75,000; steam heat, about \$6000; bids opened July 17. (Lately noted.)

Va., Petersburg.—Knights of Columbus are reported to expend \$50,000 for buildings at cantonment site.

Va., Petersburg.—National Y. M. C. A. will erect 10 buildings at cantonment camp; eight 128x45 ft. with wing 45x60 ft., to be used as brigade associations; 1 story; administration building, 2 stories; 12 rooms; other building to be auditorium to seat 6000; tabernacle style; equipped with moving-picture apparatus, shower baths and probably swimming pool.

BANK AND OFFICE

Ala., Athens.—John C. Eyster will erect office building; 2 stories.

Ala., Auburn.—Dr. C. S. Yarbrough is having plans prepared for postoffice, with offices and lodgerooms on 2d floor. (See Government and State.)

Ky., Louisville.—Duncan Coal Co. will erect office building; 1 story; 55x65 ft.; face brick; Bowling Green stone trim; gravel roof; cost \$15,000; plans by Joseph & Joseph, Atherton Bldg., Louisville, and they will receive bids.

Okla., Tulsa.—Planter National Bank purchased Gillette Bldg. and will remodel for bank building; 50x100 ft.; 2 stories and basement; install vaults, etc.; cost \$25,000.

Okla., Tulsa.—Oklahoma Producing & Refining Co. will erect office building.

Tex., Peryton.—Farmers and Stockmen's State Bank, Ochiltree, Tex., organized by Roy Sappington, Supply and Oklahoma City, Okla., and L. F. Hall, Ochiltree; will erect bank building; brick; composition roof; tile and other flooring; steam heat; town electric lighting; cement sidewalks; bids opened about Oct. 1; cost \$4000.

Va., Lynchburg.—Hudson-Morgan Electric Co. has plans for remodeling building for offices, etc. (See Stores.)

CHURCHES

Ala., Mobile.—Seventh-Day Adventists will erect building; kellanstone with green granite dash; vestibule, main auditorium, Sabbath-school room, library, parochial-school room, 2 dressing-rooms, baptistry, etc.; Rev. J. F. Wright, Pastor.

Ark., Jonesboro.—Methodist Church will erect building; cost \$5000. Address The Pastor.

Fla., Tampa.—St. Andrew's Church will erect guildhouse. Address The Rector.

La., Lake Charles.—Lake Charles Presbyterian Church has plans by Favrot & Livaudais, Ltd., New Orleans, for building; 40x100 ft.; brick; composition roof; frame floors; gas steam heat; cost \$25,000; bids

opened July 18. Address Frank Roberts, Treas., Lake Charles. (Lately noted.)

Md., Baltimore.—University Baptist Congregation Incptd.; purchased site at Charles and 36th Sts., with frontage of 400 ft. on each street; is asking competitive plans for group of buildings, to include church to seat 1000, Sunday-school to seat 500 and parsonage; church and Sunday-school to cost about \$175,000; parsonage to be erected later; construction probably begins in fall; W. M. McCormick, Prest., Baltimore Commercial Bank, Pratt and Concord Sts., Chrmn. Building Com. (Previously noted.)

Mo., Kansas City.—Third Church of Christ, Scientist, will erect building; reported cost \$100,000. Address The Reader.

Okla., Anadarko.—Methodist Church will erect building. Address The Pastor.

Okla., Bristow.—Christian Church will erect brick building. Address The Pastor.

Okla., Newkirk.—Methodist Church plans to erect building. Address The Pastor.

Okla., Oklahoma City.—J. L. Hawkins has permit to erect \$25,000 church; brick and concrete.

Tenn., Knoxville.—Fifth Avenue Presbyterian Church will erect addition to Sunday-school department; plans call for several classrooms, secretary's office, remodeling furnace and installation of lighting system; cost \$5000; Geo. C. Williams, Secy.

Tenn., Lebanon.—Lebanon Cumberland Presbyterian Church lets contract in August for erection of building to replace burned structure; brick; metal roof; hot-air heat; seating capacity, with Sunday-school, 350. J. A. Whitener is interested. (Lately noted.)

Tenn., Lexington.—Baptist Church, Rev. Clarence E. Azbill, Pastor, will erect building at Long Sought schoolhouse, 8 mi. from Lexington.

Tenn., Memphis.—Central Baptist Church is having plans prepared by McGee & Lester, 636-38 Scimitar Bldg., Memphis, for remodeling Sunday-school room and social department rooms; cost, several thousand dollars.

Tex., Slaton.—Methodist Church is having plans prepared by M. L. Waller & Co., 414 Dan Waggoner Bldg., Fort Worth, for building.

Tex., Sour Lake.—Baptist Church will erect building. Address The Pastor.

Va., Hampton.—Baptist Church, Rev. Wm. P. Stuart, Pastor, opens bids July 25 to erect brick Sunday-school building; plans include Sunday-school rooms, kitchen, dining-room and auditorium; steam heat; cost \$12,000 to \$15,000; pipe organ and chimes in belfry, \$5000; J. H. Brinson, Archt.

Va., Suffolk.—Rev. J. Arthur Winn, Pastor of Main Street M. E. Church, is interested in erection of district parsonage.

W. Va., Clarksburg.—Church of United Brethren will erect building; brick; cost \$12,000. Address The Pastor.

CITY AND COUNTY

Ark., Marianna.—Jail.—City is having plans prepared by J. C. Jones, Forrest City, Ark., for jail; cost \$45,000.

Fla., Palm Beach.—Town Hall.—Town votes July 31 on \$50,000 bonds to erect town hall, etc. Address Town Clerk.

Md., Baltimore.—Morgue.—Board of Awards rejected bids to erect morgue on Aliceanna St., near President St.; J. J. Byrne, Inspector of Buildings, City Hall. (Lately noted.)

Mo., Joplin.—Storeroom and Detention Hospital.—City will erect 1-story brick building for storeroom, workshop and municipal kitchen; also considering erecting detention hospital 3 or 4 buildings; cost about \$20,000; Dr. R. B. Tyler, Commr. Health and Sanitation.

Tenn., Memphis.—Market and Auditorium. City votes July 28 on \$375,000 bonds to erect market-house and auditorium; spur railroad track from market to platform for loading refrigerator cars, etc.; construction under supervision of R. R. Ellis, W. C. Duttlinger, John T. Walsh and others, Commrs. (Lately noted.)

Tex., Austin.—Storeroom.—City will erect storeroom for water and light department; 40x50 ft.; brick; gravel roof; cement and wood floors; cost \$5000; day labor; E. C. Bartholomew, Supt. Public Property. (Lately noted.)

Va., Portsmouth.—Market.—City will erect market building; Guy Webb, Robert Johnson, Geo. F. Wilkinson and others, Commrs.

COURTHOUSES

Tex., Leakey.—Real County will erect courthouse; 42x48 ft.; stone; cost \$12,000;

date opening bids not set; D. D. Thompson, County Judge, may be addressed. (Lately noted.)

DWELLINGS

Ala., Fairfield.—Tennessee Coal, Iron & Railroad Co., Birmingham, will build 600 houses for employes in connection with plans for additions.

Ark., De Queen.—D. D. Reese will erect residence, etc. (See Miscellaneous Structures.)

D. C., Washington.—W. C. and A. N. Miller, 3151 Highland Place, will erect 5 dwellings at 7-15 Rock Creek Church Rd.; 20 ft. wide; 6 rooms and bath; cost \$16,500.

D. C., Washington.—Thrift Building Co. has plans by Geo. T. Santmyers, 921½ New York Ave. N. W., Washington, for 17 dwellings on Quincy St. between 13th & 14th Sts.; brick; 6 rooms and 2 baths; colonnade front porches; rear sleeping porches.

Fla., Clearwater.—Frank Schwebel will erect 1½-story frame dwelling.

Fla., Jacksonville.—E. Z. Buttrick will erect residence and garage; frame; cost \$3600.

Fla., Miami.—Dr. Clare Smith will erect \$3500 residence.

Fla., Miami.—Brigham Realty Co. will erect 2 dwellings; cost \$6500.

Fla., St. Petersburg.—W. A. Robinson, Steubenville, O., plans to erect residence.

Fla., St. Petersburg.—R. L. Hayman will erect residence.

Ga., Columbus.—F. Edward Lummbus has plans by T. W. and E. O. Smith, Murrah Bldg., Columbus, for residence; brick; tile floors; furnace heat; cost \$7500.

Ga., Cuthbert.—A. A. Lockett has plans by T. F. Lockwood, Columbus, Ga., for residence; 10 rooms; wood; pine-shingle roof; pine floors; electric lights; cost \$5000; construction begins Aug. 1.

Ga., Macon.—Jordan Realty Co. is reported to erect number of dwellings.

Ga., Macon.—J. C. Hinton, 105 Lamar St., is reported having plans prepared by W. A. Rayfield & Co., Birmingham, Ala., for residence; 39x54 ft.; wood; wood-shingle roof; pine floors; electric lights; cost \$4000; bids opened Aug. 1; construction begins Aug. 10. Address architects.

Md., Baltimore.—Lorenz Schoenlein, Jr., 306 St. Paul St., will erect 11 two-story dwellings on south side Liberty Heights Ave.; 23x35 ft.; cost \$2200 each; Groscup Co., Inc., Archt., 2549 St. Paul St., Baltimore.

Md., Baltimore.—Murray & Haynes, Carrison and Duval Aves., will erect three 1½-story frame bungalows on north side Kathlan Ave., 250 ft. west of Oakfield Ave.; cost \$10,000.

Md., Baltimore.—Meyer Bloom indefinitely postponed erection of restaurant and dwelling. (See Miscellaneous Structures.)

Md., Baltimore.—Frank O. Singer, Jr., 600 Equitable Bldg., will erect eighteen 2½-story dwellings; 6 each on north side of Brooks lane north of Brookfield Ave., each side of Brookfield Ave. south of Lake Drive, and northwest corner of Brookfield Ave. and Brooks Lane; 25x40 ft.; cost about \$60,000.

Miss., Centerville.—Dr. W. I. Marsalis has plans by N. W. Overstreet, Jackson, Miss., for dwelling; 51x36 ft.; frame; composition roof on deck; metal deck mould; casement windows; electric wiring; cost \$6000. (Lately noted.)

Miss., Grenada.—S. M. Cain is having plans prepared by Mahan & Broadwell, Memphis, Tenn., for 2-story brick-veneer dwelling; cost \$7500.

Mo., Kansas City.—L. Rohde will erect 2-story frame dwelling; cost \$6000.

Mo., Kansas City.—Mrs. Alice G. Jackson will erect 2-story brick dwelling; cost \$14,000.

Mo., Kansas City.—R. L. Rinker will erect 42 dwellings at 47th St. and Tracy Ave.

Mo., Kansas City.—Kansas City Investment Co. will erect 3 stucco dwellings, 1427 W. 50th St., 1421 Westwood Ter. and 1212 W. 51st St.; cost \$10,500.

N. C., Winston-Salem.—R. J. Reynolds Tobacco Co. will erect 9 residences; about 6 rooms; water, sewer and electric-light connections; cost \$2500 each.

Okla., Oklahoma City.—John E. Donnell will erect one 2-story and four 1-story frame dwellings; cost \$12,000.

Okla., Tulsa.—Arthur H. Craver, 307-S Bliss Bldg., will erect residence; 32x56 ft.; brick and hollow tile; composition shingle roof; combination gas and coal hot-air furnace; city lighting; cost \$21,000; construction under supervision of superintendent. (Lately noted.)

S. C., Aiken.—James T. Cannon is erecting residence; 14 rooms and basement; Fisklock tapestry brick, with cement sills and asbestos shingles; American Ideal hot-water heating plant and vacuum cleaning system in basement; construction under supervision of owner.

S. C., Charleston.—W. Mitchell Whaley will erect residence; 2 stories; frame; hardwood floors; furnace heat; Benson & Barbot, 26 Broad St., Archts., Charleston.

S. C., Yong's Island.—J. W. Garaty is having plans prepared by Benson & Barbot, 26 Broad St., Charleston, S. C., for residence; about 55x65 ft.; 3 stories and basement; monolithic concrete and hollow tile; tile roof; promenade tile for porches and conservatory; 15 rooms, 2 sleeping porches, 3 tiled baths; hardwood floors; brick mantels; laundry; hot-water heat; Delco lighting and water system; plans ready July 21.

Tenn., Memphis.—J. Ginsburg is having plans prepared by McGee & Lester, 636-38 Scimitar Bldg., Memphis, for brick-veneer dwelling; tile roof; cost \$15,000.

Tenn., Memphis.—Abe Lewis is having plans prepared by McGee & Lester, 636-38 Scimitar Bldg., Memphis, for residence; brick veneer; tile roof; cost \$15,000.

Tex., El Paso.—Robert Lander will erect \$10,000 residence.

Tex., El Paso.—H. P. Hadfield will erect 5 bungalows; 24x26x22 ft.; brick; 3-ply built-up composition roof; oak and pine floors; cost \$2500 each; lighting \$30 each; plans and construction by owner.

Tex., El Paso.—J. C. McElroy will erect \$8000 residence in Castle Heights.

Tex., El Paso.—Ernest Wright will erect tenant-house; cost \$7000.

Tex., Houston.—W. J. Taylor will erect 5 bungalows; hollow tile stucco.

Tex., Orange.—George A. Foreman, Jr., is promoting organization of company to erect dwellings; probably erect 50 within year.

Tex., Orange.—R. F. Brown, A. O. McLeon, H. Tucker and others, committee promoting organization of company with \$100,000 capital to erect 1000 tenants' houses.

Tex., San Antonio.—Mrs. C. L. Wagner will erect 9-room residence; cost \$6000.

Tex., Silsbee.—H. M. Richter has plans by Babin & Beck, Beaumont, Tex., for residence; 6 rooms; wood; cypress shingle roof; pine floors; cost \$3700.

Va., Richmond.—Realty & Finance Corporation of Virginia will erect frame dwelling; cost \$3000.

Va., Staunton.—B. L. Partlow will develop Grand View addition; erect number bungalows; brick and shingle; porches; hot-water heat; gas and electric lights; will grade, construct macadam streets, install water, gas and sewerage pipe, concrete paving, etc.

GOVERNMENT AND STATE

Ala., Auburn.—Postoffice.—Dr. C. S. Yarbrough is having plans prepared by S. L. MacIntosh, Opelika, Ala. for postoffice, office and lodge building; press brick; terracotta trim; 42x70 ft.; cost \$8000 to \$10,000.

Ala., Jasper.—Postoffice.—Bids received until July 17 by Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., to erect postoffice. (Lately noted to have rejected bids.)

Ark., Little Rock.—Association Building.—Y. M. C. A. selected sites for buildings at army cantonment. (See Assn. & Frat.)

Ark., Rogers.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until July 26 to erect proposed \$75,000 postoffice building.

D. C., Washington.—Treasury Department, Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., is having plans prepared by Cass Gilbert, 11 E. 24th St., New York, for annex to department at Pennsylvania Ave. and Madison Pl.; 6 stories; marble and granite.

Fla., Jacksonville.—Camps.—Quartermaster-General's Dept., Washington, D. C., is reported to have selected sites at Jacksonville, Alexandria, La.; Hattiesburg, Miss., and Charlotte, N. C., for National Guard camps; the latter site selected in place of Fayetteville, N. C., lately noted; Col. I. W. Littell, Washington, in general charge.

La., Alexandria.—Camp.—See Fla., Jacksonville.

Miss., Hattiesburg.—Camp.—See Fla., Jacksonville.

N. C., Charlotte.—Camp.—See Fla., Jacksonville.

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Tex., Waco.—Association Buildings.—Y. M. C. A. will erect buildings at army camp. (See Assn. & Frat.)

Va., Petersburg.—Association.—Knights of Columbus are reported to erect buildings at cantonment camp. (See Association and Fraternal.)

Va., Petersburg.—Association.—National Y. M. C. A. will erect 10 buildings at cantonment site. (See Association and Fraternal.)

HOSPITALS, SANITARIUMS, ETC.

Ky., Lexington.—Fayette Tuberculosis Sanatorium will erect building; cost about \$55,000.

Mo., Joplin.—City is considering erecting detention hospital. (See City and County.)

N. C., Gastonia.—Directors North Carolina Orthopedic Hospital will erect building near Gastonia; R. B. Babington may be able to supply information.

Tex., San Angelo.—Tom Green County Commrs. ordered vote August 21 on \$50,000 bonds to erect hospital.

HOTELS

Ala., Athens.—C. F. and J. W. Frost will erect 44-room hotel; managed by Quincy B. Love, Twickenham Hotel, Huntsville, Ala.

Fla., De Funiak Springs.—Walker D. Willis, Pensacola, Fla., is preparing plans for addition to hotel and other improvements; day labor.

Fla., Miami.—J. C. Verveen will erect 3-story building; stores on first floor; hotel above; 30 rooms; press brick; cost \$30,000.

Fla., West Palm Beach.—W. A. Weihe has plans by C. H. Meerdink, West Palm Beach, for addition to Salt Air Hotel; 40x40 ft.; 5 stories; stucco; composition roof; wood and composition tile; electric heating and lighting; cost \$10,000; construction by owner begun. (Lately noted.)

Ohio, Mansfield.—J. L. Barr, 105 Citizens Bldg., represents capitalists planning to build 100-room hotel; want bids for erection.

Tex., Sanderson.—Joe Kerr will erect hotel, meat market, barber shop and confectionery store to replace structure lately noted damaged by fire; brick; electric lights.

Va., Norfolk.—Doddson Hotel Corporation leased Hotel Princess; will remodel and connect with each floor of Lorraine Hotel by steel bridge 15 ft. long; also remodel Lorraine Hotel; convert mezzanine floor into writing and lounge room; glass front; arcade entrance 14 ft. wide, provided with telephone booths, cigar stand and soda fountain; cafe and photographic studio on lower floor.

MISCELLANEOUS

Ala., Gadsden.—Clubhouse.—Gulf States Steel Co. will erect clubhouse for employees; concrete and wood; composition roof; wood floors; hot-water heat; electric lights, power from company's works; cost \$15,000. (Lately noted.)

Ark., Argenta.—Clubhouse.—Army Athletic Association, incptd. with J. F. Keeley, Prest., and Paul R. Grabel, Secy-Treas., is having plans prepared by Theo. Sanders, Little Rock, for clubhouse; auditorium to seat 2000; equip with athletic paraphernalia, shower and needle baths, reading-rooms and stage; cost \$10,000; will probably let contract to W. F. Ault, Little Rock.

Ark., De Queen.—Barn, etc.—D. D. Reese will erect livery barn, residence and out-buildings to replace structures lately noted damaged by fire at loss of \$600; probably brick or concrete.

Ark., Piggott.—Clubhouse.—J. U. Class of Presbyterian Church plans to erect clubhouse on St. Francis River about 6 mi. from Piggott.

Ky., Louisville.—Sheds.—Mengel Box Co. will erect frame lumber shed at 13th St. and Ormsby Ave.; cost \$540.

Md., Baltimore.—Restaurant.—Meyer Bloom, 2003 Linden Ave., indefinitely postponed erection of restaurant and dwelling at 1901-3 E. Lombard St.; 3 stories and basement; brick and steel; Geo. R. Callis, Jr., Archt., Knickerbocker Bldg., Baltimore. (Lately detailed.)

N. C., Gastonia.—Fair.—Gaston County Fair Assn. will erect 2 exhibit buildings; 60x250 ft.

Tex., Dallas.—Clubhouses.—Perkins Dry Goods Co. and Sears-Roebuck Co., both of Dallas, will each erect clubhouse at Lake Worth.

Tex., Fort Worth.—Clubhouse.—Armour & Co. will erect clubhouse at Lake Worth for Armour Foremen's Efficiency Club; 70x45 ft.; construct boat landing.

RAILWAY STATIONS, SHEDS, ETC.

Md., Overlea.—United Railways & Electric Co., Wm. A. House, Prest., Continental Bldg., Baltimore, is having plans prepared by Otto G. Simonson, Maryland Casualty Tower Bldg., Baltimore, for station.

Mo., Kansas City.—Kansas City Railways Co., 1500 Grand Ave., will erect platform over tracks on Union Station plaza; ornamental glass and copper canopy; open sides; 100x35 ft.; space 16 ft. wide for passengers.

Okla., Tulsa.—Tulsa Street Railway Co. will erect addition to double capacity of car barns; M. McGrath, Supt.

Tenn., Bristol.—Southern Ry. Co., B. Herman, Chief Engr. M. W. & S. Lines East, Charlotte, N. C., will erect passenger station.

Tex., Clifton.—Gulf, Colorado & Santa Fe Ry. Co., F. Merritt, Ch. Engr., Galveston, will erect depot to replace burned structure; standardized plans; construction by company's force.

SCHOOLS

Ala., Birmingham.—Board of Education of Jefferson County is having plans prepared by D. O. Whildin, Birmingham, for 4 consolidated schools at Lewisburg, Bradford, Majestic, Leeds and Sayre; 8 rooms; brick; fireproof; unit plan; cost \$10,000 to \$12,000 each.

Ala., Leeds.—See Ala., Birmingham.

Ala., Lewisburg.—See Ala., Birmingham.

Ala., McCullough.—McCullough and Jack Springs Consolidated School Districts will erect brick building. Address Supt. of Public Instruction of Escambia County, Brewton, Ala.

Ala., Sayre.—See Ala., Birmingham.

Ark., Allport.—Allport Industrial Trade School Trustees have plans by H. C. Criner, England, Ark., for previously-noted building; 42x80 ft.; frame; temporary rubber roof or tin shingle roof; cost \$15,000; construction begins about Aug. 1. Address R. Amos, Promoter and Gen. Mgr., Allport. (See Machinery Wanted—Electric Plant—Heating Apparatus.)

Ark., Bearden.—School Board plans to erect annex to high school building.

Ark., Clarksville.—School Board plans to erect 2-story brick school; cost about \$10,000.

Ark., Norfolk.—Norfolk Special School District is considering issuing \$5000 to \$10,000 bonds to erect school. Address District School Trustees.

Fla., De Land.—Special Tax District No. 41, Volusia County, plans to issue \$12,000 bonds for schools. C. R. M. Sheppard, Secy. Board of Public Instruction of Volusia County.

Fla., Gonzalez.—County will erect dormitory at J. M. Tate Agricultural School. Address A. S. Edwards.

Fla., Jacksonville.—Board of Public Instruction of Duval County, F. A. Hathaway, Supt., opened bids to erect 8-room brick addition to Lackawanna school building; O. P. Woodcock, Jacksonville, low bidder at \$52,400; also approved plans for Central Grammar School. (Lately noted.)

Fla., Laurel Hill.—S. J. Welch, Pensacola, Fla., is preparing plans for enlarging school building.

Fla., Oakland.—See Fla., Winter Garden.

Fla., Winter Garden.—Sub-school District No. 7 (Winter Garden and Oakland) voted \$30,000 bonds to erect high school; also erect primary schools at Winter Garden and Oakland. Address District School Trustees.

Ga., Atlanta.—J. H. Whisenant will erect number of 6-room bungalows in addition to 5 now under construction to cost about \$3500 each; 6 rooms; 1 brick veneer, others frame; composition roof; wood floors; grates and warm-air heating; construction by owner. (Lately noted.)

Ga., Blakely.—Colomokee School District will erect school. Address Supt. Board of Public Instruction of Early County, Blakely.

Ky., Lexington.—Fayette County Board of Education receives bids until July 20 to erect school in Bell's Schoolhouse neighborhood; plans and specifications at office Nannie G. Faulconer, Chrmn. Board of Education, Lexington.

La., Lafayette.—Lafayette Parish will issue \$70,000 bonds to erect and improve schools; L. J. Allmon, Secy. Parish School Directors.

Miss., Blue Mountain.—School Board has plans by N. W. Overstreet, Jackson, Miss., for high school; 50x80 ft.; 7 classrooms; composition roof; furnace heat; cost \$10,000. (Lately noted.)

Miss., Eupora.—Agricultural High School of Webster County has plans by N. W. Overstreet, Jackson, Miss., for 2 dormitories for boys and girls; frame; 95x35 ft.; wood shingle roof; brick foundation; cost \$6000.

Miss., Jackson.—Gulf Coast Military Academy will enlarge school buildings.

Miss., Lexie.—Lexie School Trustees have plans by Luther Smith, Tylertown, Miss., for school; 4 rooms 24x32 ft., 1 room 40x60 ft., and 2 small rooms; wood; shingle roof; heart pine floors; cement sidewalks; cost \$3000; bids opened August 1. Address B. B. Holmes, Lexie. (Lately noted.)

Miss., Magnolia.—Leggett Consolidated School District votes July 28 on \$5000 bonds to erect and equip school buildings and teachers' home. Address District School Trustees.

Miss., Magnolia.—Board of Supervisors Woodrow Consolidated School Dist. plans to issue \$3000 bonds to erect repair and equip school building and teachers' home.

Miss., Meridian.—Oakland Heights Separate School District will erect lately-noted school; 2 stories; frame; 6 rooms and auditorium; cost \$4500; voted \$6000 bonds. Address M. W. Stone, Secy. School Board, Route No. 3, Meridian. (See Machinery Wanted—Heating Equipment; Water Equipment.)

N. C., Angier.—Board of Trustees, Angier High School District, R. D. Overby, Chrmn., receives bids until July 23 to erect high school; plans and specifications at office J. M. Kennedy, Archt., Raleigh, N. C.

N. C., Greenville.—Model School, Robt. H. Wright, Prest., receives bids until July 19 to erect additions to building; plans and specifications at office Willard G. Rogers, Archt., Charlotte, N. C., and Mr. Wright.

N. C., Mount Airy.—City votes Aug. 7 on \$30,000 bonds to acquire sites and erect additional schools. E. C. Bivens, Mayor.

Okla., Allen.—School Board, District No. 1, will erect addition to high school.

Okla., Checotah.—Board of Education has plans by H. O. Valeur & Co., Muskogee, Okla., for ward school building. (Previously noted.)

Okla., Conglate.—School Board is having plans revised by Ye Planry, Dallas, Tex., for high school and deferred date opening bids; completion of plans in week or ten days. (Lately noted.)

Okla., Fort Cobb.—School Board, A. F. Winans, Clerk, will erect grade school; W. L. McAtee, Archt., Blackwell, Okla.

Okla., Grandfield.—City defeated \$25,000 bonds to erect school. (Lately noted.)

Okla., Jenks.—Jenks District School Board will erect school; tax voted; Mrs. Minnette Hedges, Supt., Tulsa County Schools, Tulsa.

Okla., Red Fork.—City voted bonds to erect school building to cost \$50,000. Address The Mayor.

Okla., Tulsa.—Board of Education, H. O. McClure, Prest., receives bids until July 23 to erect 6-room school building in Home Gardens Addition; plans and specifications at office Supt. of Schools, High School Bldg.; construction under supervision of F. E. Shallenberger.

S. C., Columbia.—University of South Carolina will probably let contract about Aug. 15 for erection of \$40,000 law building; 2 stories; red brick; buff limestone trim; 3 classrooms; moot courtroom, library, etc.; Edwards & Sayward, Archts., Atlanta. (Lately noted.)

S. C., Ehrhardt.—Trustees are having plans prepared by Benson & Barbot, 26 Broad St., Charleston, S. C., for high school; 125x65 ft.; brick; ordinary construction; metal roof; 6 rooms, office, etc.; heating, plumbing and electric wiring; plans ready for contractors in about three weeks.

S. C., McColl.—School Board, J. R. Bivens, Chrmn., has plans by C. Gadsden Sayre, Anderson, S. C., for high school; brick; stone trim; 86x68 ft.; T-shape; composition roof; bids opened middle of August; 6 classrooms; full basement for playrooms only; heating and plumbing in old grammar school building adjoining; cost \$15,000; steam heat for 2 buildings, \$2000; electric lights, \$300. Address Mr. Bivens.

Tenn., Humboldt.—N. A. Senter, Mayor, receives bids until July 20 to erect 2-story and basement high school; separate bids for general contract, plumbing, heating and wiring; brick; 105x110 ft.; slate roof; joist floors; plans and specifications at office McGee & Lester, 636-38 Schmitz Bldg., Memphis. (Lately noted.)

Tenn., Ramer.—Trustees have plans by R. H. Heaven, Jackson, Tenn., for high school;

50x60 ft.; brick; asphalt or asbestos roof; wood floors; cost \$6000; construction, by building committee, begins about August 15. (Lately noted.)

Tex., Gatesville.—State Juvenile Training School, C. E. King, Supt., will erect building; 2 stories and basement; 70x80 ft.; brick and concrete; composition roof; concrete floors; steam heat from present plant; electric lights from power plant; concrete sidewalks; cost \$37,500. Address Wiley G. Clarkson, Archt., Fort Worth, Tex. (Lately noted.)

Tex., Italy.—City has plans by T. J. and J. O. Galbraith, Slaughter Bldg., Dallas, and Hillsboro, Tex., for brick school building; bids received until July 16 by J. M. Parker, Mayor.

Tex., Kingsville.—State Normal Board selected Kingsville as site for South Texas Normal School; Jas. E. Ferguson, Governor; W. F. Doughty, Supt. of Public Instruction, Austin.

Tex., Manchaca.—Trustees of Public School Dist. No. 44, S. T. Carpenter, Prest., have plans by Dennis R. Walsh, Littlefield Bldg., Austin, for remodeling public school.

Tex., Nacogdoches.—State Normal Board selected Nacogdoches as site for Stephen F. Austin East Texas Normal School; Jas. E. Ferguson, Governor; W. F. Doughty, Supt. of Public Instruction, Austin.

Tex., Slaton.—School Board is having plans prepared by M. L. Waller & Co., 414 Dan Waggoner Bldg., Fort Worth, for school building.

Va., Goshen.—Walker's Creek School Board, J. F. Brooks, Clerk, rejected all bids to erect school; Board will furnish materials and build by day; 2 stories; 6 rooms. (Previously noted.)

W. Va., Howard.—Board of Education, C. E. Yeater, Prest., receives bids until July 30 to erect schools in Liberty District, No. 5, on Cameron Ridge, and No. 8, on Greenfield Ridge; plans at office E. O. Mason, Secy.

W. Va., North View.—Coal District, L. W. Ogden, Clerk Board of Education, Clarksburg, W. Va., will erect grade school; 38x55 ft.; cost \$20,000; S. W. Ford & Co., Archts., Clarksburg, W. Va.

W. Va., Parkersburg.—Board of Education will expend \$10,000 to remodel high school; 2 stories; 16x21 ft.; F. L. Packard, Archt., Hayden Bldg., Columbus, Ohio; Geo. D. Heaton, Secy. Board of Education.

STORES

Ala., Birmingham.—Mrs. Jane Lynch will erect 1-story brick building, 1226 Avenue D; cost \$7700.

D. C., Washington.—J. Leo Kolb, 923 New York Ave. N. W., will erect 1-story brick building; 40x55 ft.; metal window sash and metal doors with rib and fireproof glass; also remodel building and construct dumb-waiter or elevator 14 ft. on outside; equipped with gates; carrying capacity 1000 lbs.; enclosure brick or concrete and metal lathing. (See Machinery Wanted—Elevator.)

Fla., Miami.—J. C. Verveen will erect store and hotel building. (See Hotels.)

Fla., Rockledge.—W. H. Rankin, Hotel Indian River, will erect fireproof 2-story concrete-block building, 52x28 ft., containing 3 storerooms.

Fla., Tarpon Springs.—E. Meres is superintending construction of store building on West Tarpon Ave.; 70x80 ft.; brick, 8 in. wall; composition roof; tile floors; cost \$4500; W. Castaing, Archt., Tarpon Springs. Address Mr. Meres. (Lately noted.)

Fla., West Palm Beach.—Palm Beach Investment Co. will erect business building; construction on commission basis by owner, who will purchase all materials; plans call for 2-story structure; reinforced concrete and stucco; old ivory finish; main office 52x42 ft.; lobby 27 ft. sq., and ladies' restroom 10x12 ft.; on first floor to have marble wainscot, frosted-glass partitions; tile floor, plate-glass windows, 7 ft. wide; second floor for offices; foundation to permit erection of 4 additional stories later. L. G. Biggers, owner's agent, West Palm Beach.

Ga., Atlanta.—W. V. Zimmer will expend \$4500 to repair building.

Ga., Atlanta.—John W. Alexander will erect six 1-story brick stores; 20x100 ft. each; also brick garage; cost \$30,000; completion by Sept. 1.

Ga., Columbus.—Mrs. Alice Nuckolls has plans by T. W. and O. E. Smith, Murrah Bldg., Columbus, for remodeling business building; cost \$4500.

Md., Baltimore.—O. B. Pyle, Sr., 111 W. 29th St., acquired 4-story brick building at north-

east corner Charles St. and Lafayette Ave. and will convert into 3 stores on lower floor and apartments above.

Mo., Kansas City.—Mrs. Louise Reiger will erect 1-story brick store; cost \$1500.

Mo., Kansas City.—James Flanagan, Sr., C. J. Flanagan and Michael J. Savage will erect temporary 2-story building; basement and subbasement; cost \$75,000; foundation to permit erection of 20-story building later; site 80x60 ft.

N. C., Fayetteville.—Gallup & Co. will erect store; 40x158 ft.; 2 stories; also install grist mill and refrigerating department. (Lately noted.)

N. C., Greenville.—Gallivan Building Co. will remodel Mallard building; cost \$3500.

N. C., Winston-Salem.—J. D. Murphy will erect 2-story brick business building; cost \$7500; construction by day labor superintended by O. C. Perryman, Winston-Salem.

Okla., Duncan.—J. C. Craig will erect business building; brick; 50x90 ft.

Okla., Henryetta.—M. Hale will erect business building; brick.

Okla., Miami.—W. L. McWilliams is considering remodeling and erecting additional story to business building; cost \$12,000.

Okla., Quay.—Continental Supply Co. will erect storeroom and warehouse building; 30x110 ft.

S. C., Greenville.—Belk-Kirkpatrick Co., J. W. Kirkpatrick, Mgr., will expend \$10,000 to remodel and enlarge store building; white pressed brick and limestone front; 30-ft. addition to rear; both basements cemented, etc.

Tenn., Chattanooga.—Trigg, Dobbs & Co. have plans by Geo. A. Collins, Chattanooga, and is receiving bids to remodel store building at 703-07 Broad St.; 75x114 ft.; heating plant to consist of boiler, piping and asbestos covering; cost \$15,000. Address architect. (Lately noted.)

Tex., Marlin.—Mrs. Robeson has plans by F. E. Hally, Marlin, for store building to replace structure lately noted damaged by fire; 1 story; brick, cement and steel; tin roof; cement floors; cost \$5000.

Tex., Sanderson.—Joe Kerr will erect building for store, etc. (See Hotels.)

Tex., Sanderson.—W. F. Bohlman will erect store and moving-picture theater. (See Theaters.)

Va., Gretna.—G. F. Franklin, Tashes, Va., will erect store on Main St.; 30x80 ft.; wood; tin roof; cement floors; construction begins Feb. 1, 1918.

Va., Lynchburg.—Hudson-Morgan Electric Co. has plans by Stanhope S. Johnson, Lynchburg, for remodeling brick store building for machine shop, offices, store and fixture parlors.

Va., Norfolk.—Goldsboro Serpell is reported to erect building at 12th and Granby Sts.

Va., Richmond.—Kings & Co. will expend \$15,000 to repair brick building at 5th and Cary Sts.

W. Va., Clarksburg.—Ben. Levy will erect 2 buildings for Interurban News Stand; lower floor for store.

THEATERS

Ga., Columbus.—Jas. E. Deaton will erect moving-picture theater; cost \$5000; T. W. and E. O. Smith, Architects, Murrah Bldg., Columbus.

Tex., Sanderson.—W. F. Bohlman will erect picture show and store building to replace structures lately noted damaged by fire; brick or concrete; roofing not decided; wood floors; architect or contractor not selected.

WAREHOUSES

Ark., Fort Smith.—Fort Smith Compress Co. has plans by A. Klingensmith, Fort Smith, for cotton warehouse; 151x388 ft.; reinforced concrete; reinforced concrete roof, roof cover not specified; concrete floors; bids opened July 23; cost \$35,000. Address E. C. Creekmore, V-P, and Mgr., care of A. Klingensmith, Merchants Bank Bldg., Fort Smith. (Lately noted.)

Ky., Falmouth.—Burley Tobacco Co. will erect loose-leaf warehouse; J. S. Baskett, Mgr.

Okla., Quay.—Continental Supply Co. will erect storeroom and warehouse building. (See Stores.)

Tex., El Paso.—H. H. Hadfield will erect warehouse; cost \$4000.

Tex., El Paso.—El Paso Gas Co. will erect 43x120-ft. building for warehouse and shop and other for machinery; concrete founda-

tion; brick walls; steel trusses; asbestos protected metal roof; cement floors; electric and gas lights; construction by owner; American Power & Light Co., Archt., 71 Broadway, New York. (Lately noted.)

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Fla., Miami.—Quinn & Reed let contract to erect store and apartment-house. (See Stores.)

Fla., Orlando.—L. C. Townsend has contract to erect Jefferson Court Apartments; George E. Krug, Archt., Orlando. (Lately noted.)

Fla., St. Petersburg.—St. Petersburg Investment Co. let contract to erect store building with apartments above. (See Stores.)

Fla., St. Petersburg.—J. Allen Smith, Knoxville, Tenn., let contract to Rising Construction Co., St. Petersburg, to erect 3-story apartment-house and store building; hollow tile construction; stores on first floor; apartments above; cost \$20,000; to be leased by H. Walter Fuller and Walter P. Fuller. (Previously noted.)

Mo., Kansas City.—Mrs. Emma Eysell let contract to John Gosling, Jr., to erect 48-apartment flat and storerooms; 98x132 ft.; brick and cut stone; cost \$100,000; completion by winter; Frederick H. Michaelis, Archt., Kansas City. (Lately noted.)

ASSOCIATION AND FRATERNAL

Okla., Kingfisher.—A. F. & A. M. let contract to Gress Construction Co., Oklahoma City, to erect Masonic Temple; cost \$17,548.

BANK AND OFFICE

Ga., Savannah.—Mercantile Bank & Trust Co. let contract to W. O. Hawley, Savannah, to remodel building occupied by United Furniture Co. for bank and office building; plans call for new front of brick with stucco finish; 6-ft. vestibule with main entrance in center, grill to right and side entrance to left; tile floors over concrete; bronze and marble fixtures; 2d floor to be occupied by Mutual Benefit Association; cost \$3000; Levy & Clarke, Architects, 309 Germania Bldg., Savannah. (Lately noted.)

Md., Baltimore.—Baltimore Dry Docks & Shipbuilding Co., Holden A. Evans, Prest., let contract to West Construction Co., American Bldg., Baltimore, to erect office building No. 1 and warehouse No. 2 at Locust Point; former 50x150 ft.; 3 stories; latter 1 story; 50x200 ft.; fireproof; reinforced concrete; brick walls; slag roof; cement and wood floors; steam heat; electric lights; cost \$50,000; Otto G. Simonson, Archt., Maryland Casualty Tower Bldg., Baltimore. (Lately noted.)

Va., Norfolk.—Texas Company, Willard Thompson, local superintendent, let contract to Baker & Brinkley, Norfolk, to erect office building; 10 or 12 stories; fireproof; tapestry brick; terra-cotta trim; 5 storerooms on first floor; cost \$50,000; Ferguson, Calrow & Wrenn, Architects, Virginia National Bank Bldg., Norfolk. (Lately noted under Va., Portsmouth.)

Va., Richmond.—Kings & Co., Ltd. let contract to Jno. T. Wilson Co., Inc., Mutual Bldg., Richmond, to remodel building at 1438 E. Cary St., for offices; cost \$10,000; Carneal & Johnston, Architects, Chamber of Commerce Bldg., Richmond.

CHURCHES

Ga., Valdosta.—First Methodist Church let contract to J. W. Lanier, Valdosta, to remodel building; plans by G. Lloyd Greer, Valdosta, include addition, 28x90 ft.; 2 stories and basement; 14 classrooms; disappearing partitions; basement waterproofed and divided into Sunday-school room, prayer-meeting room, banquet hall and kitchen; cement plaster and floor; quartered oak finish; cost \$10,000.

Okla., Kingfisher.—Methodist Church let contract to Gress Construction Co., Oklahoma City, to erect building; cost \$31,000.

W. Va., Huntington.—First Presbyterian Church, Rev. J. Layton Mauze, Pastor, let contract to Henry Persun, Huntington, to remodel interior of building; plans include widening of steps, 2 additional doors, rearrangement of interior of vestibule, oak floors, plaster ceiling, remodeling pulpit platform and choir loft, lighting system, etc.; cost \$15,000; Meador & Sweeney, Architects, Huntington. (Lately noted.)

Tex., Waco.—Exporters & Traders' Compress & Warehouse Co., East Waco, will erect warehouse; divide into compartments; standard fire-wall partitions; capacity 8000 to 10,000 bales; cost about \$50,000.

CITY AND COUNTY

Ga., Cuthbert.—Library.—City let contract to erect Carnegie library; plans by P. E. Dennis, Macon, Ga., call for brick; stone trim; tin roof; 1 story and basement; auditorium on first floor; cost \$8000. (Previously noted.)

Okla., Drumright.—City Hall.—City let contract to J. F. Rankin, Drumright, to build city hall.

Okla., Lehigh.—City Hall.—City let contract to Ross & Elliott, Lehigh, to erect 2-story city hall; 25x60 ft.; cost \$4850; W. H. Sparger, Archt., Lehigh.

S. C., Greenwood.—Library.—Trustees let contract to W. G. Sutherland to erect Carnegie library; cost \$12,500; J. E. Summer and J. C. Hemphill, Archt., Greenwood. (Previously noted.)

Tenn., Chattanooga.—Warehouses.—City let contract to Mark K. Wilson Co., Chattanooga, to erect warehouse on Water St.; 62x102 ft.; mill construction; Barrett roof; mill floor construction; electric elevator; cost \$23,000; J. D. Alsop, Archt., Chattanooga. (Lately noted.)

Tex., Dallas.—City Hall.—City, Joe E. Lawther, Mayor, let contract to Otis Elevator Co., New York, to install prison elevator in City Hall; rejected bids for steel work for jail to be erected on top floor City Hall and will soon call for new bids; H. J. Emmins, City Building Inspector. (Lately noted.)

DWELLINGS

Fla., West Palm Beach.—A. D. Johnston, Bessemer, Mich., let contract to H. B. & H. R. Corwin, West Palm Beach, to erect dwelling; Spanish style; 2 stories; porch, 12x40 ft.; copper-wire screens; cost \$8000; O. J. Williams, Archt., West Palm Beach.

Ga., Atlanta.—Henry J. Jackson let contract to G. H. Bray, Atlanta, to erect residence; cost \$20,000; Warren C. Jackson, Archt., Candler Bldg., Atlanta.

Ga., Atlanta.—C. L. Fox has plans by and let contract to E. Morris of Dillon-Morris Co., Atlanta National Bank Bldg., Atlanta, to erect residence on Moreland Ave.; 28x70 ft.; brick veneer; composition shingle roof; wood floors; city lighting; cost \$3500; Holland furnace hot-air heat, \$200. (Lately noted.)

Ga., Augusta.—Mrs. J. P. Verdery let contract to Palmer-Spivey Construction Co., Augusta, to erect dwelling; composition roof; cost \$7500; C. L. Whaley, Archt., Augusta. Address contractor. (Lately noted.)

S. C., Aiken.—Miss Marianna Fellow let contract to Hair & Hair, Aiken, for residence; 9 rooms, 3 baths, porches; 2 stories; completion by October.

D. C., Washington.—Frederick Deltz let contract to Meltzer & McKay, 216 Oxford Bldg., Washington, to erect residence in Chevy Chase Heights, 30x47 ft.; 2 stories, cellar and attic; Bethesda blue granite foundation; first and second floors faced with variegated golden brown tapestry brick; cost \$15,000; A. B. Mullett & Co., Architects, Union Trust Bldg., Washington.

Okla., Tulsa.—Chas. F. Craver, 307 Bliss Bldg., let contract to Thomas Richmond, Tulsa, to erect residence; 38x46 ft.; frame; shingle roof; oak floors; furnace heat; city electric lights; cost \$14,000; Wm. J. Lodge, Archt., Tulsa; construction begun. (Lately noted.)

Tex., Beaumont.—J. T. Norton let contract to H. J. Davis, Beaumont, to erect residence; 1 story; hollow tile and stucco; cost \$6600; Rabin & Beck, Architects, Beaumont.

W. Va., Wilbur.—Guyan Mining Co. let contract to J. W. Fisher, Logan, W. Va., to erect 35 dwellings; cost \$20,000.

GOVERNMENT AND STATE

Ga., Atlanta.—Cantonment.—Arthur Tufts, Candler Annex, Atlanta, contractor to erect cantonment at Silver Lake at estimated cost of \$3,500,000, let contract for plumbing, lateral sewers and water-works to D. A. Farrell & Co., at cost of about \$300,000; plumbing includes sanitary and shower-bath systems; lateral sewers will run from trunk

sewers to various buildings and water-works will consist of pipes running from water mains to buildings; also let contract to Russell Electric Co., Atlanta, for electrical work, to include wiring of 90 mi. of streets, interior wiring of houses, erection of power plants, installation of motors, dynamos and transformers, placing of fixtures, etc.; Col. I. W. Littell, Washington, D. C., in general charge; J. N. Hazelhurst, Government Engr. (Lately noted.)

Ga., Augusta.—Camps.—Quartermaster-General's Department, Washington, D. C., let contract to T. O. Brown & Son, Augusta, to construct camp for national guardsmen; accommodate 35,000 men and 10,000 mules; tents; install water and sewerage-works; erect wooden kitchens, mess halls, hospitals, storehouses, etc.; Col. I. W. Littell, Washington, in general charge. (Lately noted.)

Ga., Macon.—Camp.—Quartermaster-General's Department, Washington, D. C., let contract to W. Z. Williams Company, Macon, to construct camp for national guardsmen; accommodate 35,000 men and 10,000 mules; tents; install water and sewerage-works; erect wooden kitchens, mess halls, hospitals, storehouses, etc.; Col. I. W. Littell, Washington, in general charge. (Lately noted.)

N. C., Creeds Hill.—Coast Guard Station.—Captain Commandant, U. S. Coast Guard Headquarters, Washington, D. C., let contract at \$17,567 to J. W. Martin, Elizabeth City, N. C., and to construct 2-story Coast Guard Station No. 184, 24.6x39.8 ft., and 3 accessory buildings; ordinary frame construction; red asbestos shingle roof; cement and wood floors. (Lately noted.)

S. C., Beaufort.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract to Wise Granite & Construction Co., Richmond, to erect postoffice building. (Previously noted.)

S. C., Columbia.—Cantonment.—Tucker & Laxton, Inc., Charlotte, N. C., have contract for electrical work for cantonment. (Lately incorrectly reported.)

S. C., Greenville.—Camp.—Quartermaster-General's Department, Washington, D. C., let contract to Gallivan Building Co., Greenville, to construct camp for national guardsmen; accommodate 35,000 men and 10,000 mules; tents; install water and sewerage-works; erect wooden kitchens, mess halls, hospitals, storehouses, etc.; Col. I. W. Littell, Washington, in general charge. (Lately noted.)

S. C., Spartansburg.—Camp.—Quartermaster-General's Department, Washington, D. C., let contract to Fiske-Carter Construction Co., Greenville, S. C., to construct camp for national guardsmen; accommodate 35,000 men and 10,000 mules; tents; install water and sewerage-works; erect wooden kitchens, mess halls, hospitals, storehouses, etc.; Col. I. W. Littell, Washington, in general charge. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Ga., Atlanta.—City let contract to Griffin Construction Co., Atlanta, to erect nurse's dormitory at Grady Hospital; 48x150 ft.; reinforced concrete frame; brick and terra cotta; composition roof; wood floors; cost \$60,000; Eugene Wachendorf, Archt., Atlanta. (Lately noted.)

Tenn., Columbia.—King's Daughters Hospital, Inc., let all contracts to erect hospital; 28x71 ft.; semi-fireproof; composition roof; wood floors; hot-water heat; electric lights; concrete sidewalks; dumb waiter; cost \$7000. (Lately noted.)

Tex., Orange.—Mrs. Frances Ann Lutchet let contract to M. C. Bowden, Galveston, to erect hospital; fireproof; Barrett specification roof; cement, marbleoid and tile floors; cost \$56,129.45; also let following additional contracts: Heating, Dixie Heating & Ventilating Co., Houston, at \$12,270; electric wiring, John L. Martin, Austin; plumbing, \$13,050; and vacuum cleaner, \$760, Lane Co., Houston; elevator, Otis Elevator Co., New York; C. H. Page & Bro., Architects, Austin. Address general contractor. (Lately noted.)

Tex., Temple.—King's Daughters Hospital let contract at \$29,000 to Balfanz & Johnson, Temple, to erect addition; 36x76 ft.; 4 stories; fireproof; gravel roof; concrete floors; vacuum heat; electric lighting; let contracts at \$7250 to Brunner & Gardenhire, Temple, for plumbing, and \$800 to Temple Electric Co., wiring; H. D. Pampel, Archt., Austin. (Lately noted.)

Va., Abingdon.—Building Com. of George Ben Johnson Memorial Hospital has plans by Thos. S. Brown, Bristol, Va.-Tenn., and let contract to Begler & Co., Inc., Jefferson City, Tenn., to erect main hospital building; reinforced concrete construction; exterior

walls faced with rough texture brick; steam-heating plant with high-pressure boiler which will also furnish power for running passenger elevator; colonial style with sun parlor porches at each end, glass of latter set in metal frames; cost \$40,000, exclusive of equipment; contemplate erecting unit on each side later. (Lately noted.)

HOTELS

Ga., Macon.—L. J. Smith let contract to S. F. Fulghum & Co., Macon, to erect hotel; 70 rooms; 5 stories; brick; marble-finished lobby; running ice-water in all rooms; cost \$70,000; Hupp & Shelverton, Architects, Macon. (Lately noted.)

N. C., Greensboro.—McClamroch Co., Greensboro, has contract for tile and stone work for O. Henry Hotel, for which J. L. Crouse, Greensboro, has general contract; W. L. Stoddart, Archt., 9 E. 40th St., New York. (Lately noted in detail.)

Okla., Ardmore.—Ardmore Hotel Co., Chas. von Weise, Prest., let contract to Geo. W. Stiles Construction Co., 209 La Salle St., Chicago, to erect hotel; 6 stories and basement; brick; 100x100 ft.; 135 rooms; fireproof; reported cost, \$300,000; excavation in progress; Wight & Wight, Architects, First National Bank Bldg., Kansas City, Mo. (Previously noted.)

Okla., Commerce.—McCracken & Coady Realty Co. let contract to S. Levy to erect hotel; 3 stories; 40 rooms; gas and electric lights; cost \$12,000; completion August 15.

MISCELLANEOUS

Okla., Oklahoma City.—Home.—W. L. Campbell, Oklahoma City, has contract to erect day nursery and Provident Association Home; 1 story; brick; cost \$7500 each.

SCHOOLS

Ark., Russellville.—Russellville Special School Dist. let contract to Frank Patocka, Russellville, to repair high school damaged by fire at loss of \$3771.94. (Lately noted.)

Fla., Crestview.—County Board of Public Instruction let contract at \$7294 to W. H. Spivey to erect school; 4 classrooms and auditorium; 2 stories; brick; asbestos slate roof; S. J. Welsh, Archt., Pensacola, Fla. (Previously noted.)

Fla., Jacksonville.—Board of Public Instruction let contract to O. P. Woodcock, Jacksonville, to erect East Jacksonville school; plans by H. J. Klutho, St. James Bldg., Jacksonville, call for 2 stories; concrete, with brick exterior; terra-cotta trim; composition roof; steam heat; 10 classrooms, auditorium, manual training and domestic science departments; cost \$61,000. (Previously noted.)

Ga., Thunderbolt.—Chatham County Board of Education, Savannah, let contract to Henry Eason, Savannah, to erect school building; plans by Levy & Clarke, 309 Germania Bldg., Savannah, provide frame; tin and asbestos roof; 3 classrooms with foyer space; steam heat; cost \$6695. (Lately noted.)

La., Alexandria.—Rapides Parish School Board let contract to E. P. Ferguson, care of H. J. Duncan, Archt., Alexandria, to erect school at Dixie; 2 rooms; frame; contracts for schools at Hard Times, Flatwoods and Lena not let. (Previously noted.)

La., Mandeville.—St. Tammany Parish School Board let contract to A. Barbay and E. N. Moore, Bogalusa, La., to erect school; 79x92 ft.; frame and brick; concrete foundation; shingle and Barrett specification roof; pine and cement floors; cost \$11,525; Nolan & Torre, Architects, 1023 Hennen Bldg., New Orleans. (Lately noted.)

La., New Orleans.—H. Sophie Newcomb Memorial College is reported to have let contract to George J. Glover, New Orleans, to erect proposed buildings; brick; cost \$648,000.

Md., Annapolis.—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract to J. Henry Miller, Inc., Eutaw and Franklin Sts., Baltimore, at approximately \$3,000,000, to erect addition to Bancroft Hall and enlargement of Isherwood Hall; former, 3 stories, granite exterior, center building and 2 wings; latter, 3 stories, granite base, balance gray finished brick exterior; J. H. de Sibour, Archt., 1603 K St. N. W., Washington, D. C. (Lately noted.)

Mo., Mexico.—Missouri Military Academy let contract to Ray & Son, Louisiana, Mo., to erect barracks; 40x130 ft.; 2 stories and basement; fireproof; 4-ply built-up roof; reinforced concrete floors; vacuum heat; city electric lights; cost \$40,000; Barnett, Haynes & Barnett, Architects, St. Louis. (Lately noted.)

Okla., Fort Gibson.—School Dist. No. 2, Muskogee County, let contract to Kreipke-Schafer Constr. Co. to erect school; 11x135 ft.; brick; 5-ply tar and gravel roof; cement floors covered with yellow pine or maple flooring; cost \$23,500; heating, \$3700; H. O. Valeur & Co., Architects, Muskogee, Okla. (Lately noted.)

Okla., Forum.—Directors School Dist. No. 88, Muskogee County, W. O. Kirk, Clerk, let contract to Manhattan Construction Co., Muskogee, to erect school; 100x109 ft.; 1 story; brick and stone; tar and gravel roof; 1-pipe gravity steam heat; cost \$18,000; H. O. Valeur & Co., Architects, 705 Phoenix Bldg., Muskogee, Okla. (Lately noted.)

Okla., Haskell.—Trustees let contract to J. S. Jones, Haskell, to erect school.

Okla., Shawnee.—Trustees let contracts to Higgins & Furnas, to erect manual-training building to cost \$15,000, and to F. L. Scott, to erect \$28,000 8-room ward school on Harrison St., and \$35,000 addition to high school; fireproof construction; tar and gravel roof; maple floors on concrete; steam heat for high-school addition; heaters in manual-training and ward-school buildings; electric lights. (Previously noted.)

S. C., Anderson.—School Board let contract at \$59,937 to S. F. Fulghum & Co., Macon, Ga., to erect high school, including direct steam heat; contract for plumbing let at \$4975 to Sullivan Hardware Co., Anderson, and electric work at \$2150 to Southern Public Utilities Co., Anderson, general contractor; also let contracts for lime, cement, terra-cotta, stone, face brick and steel; Jas. J. Baldwin, Archt., Anderson. (Lately noted.)

S. C., Travellers Rest.—School Board let contract to erect Armstrong School, near Travellers Rest, to replace structure damaged by fire.

Tex., Cleburne.—School Board let contract at \$31,000 to H. D. McCoy, Cleburne, to erect South Ward school building.

Tex., San Antonio.—School Board let contract to Ed. U. Oeffinger, City National Bank Bldg., San Antonio, to erect 2-story addition to school on Brooklyn Ave.; brick and concrete; gravel roof; wood floors; cost \$6000; Adams & Adams, Architects, San Antonio. (Previously noted.)

Va., Altavista.—Otter River School Board let following contracts to erect high school; H. P. Blanks, Lynchburg, Va., general contract at \$15,535; Altavista Plumbing & Electric Co., hot-water heating system, \$2675; Virginia School Supply Co., Richmond, blackboards; Southern School Supply Co., Raleigh, N. C., desks; plans by Heard, Cardwell & Craigbill, Lynchburg, call for 2 stories; brick; 91x49 ft.; gravel roof; rift-pine floors; electric lights to cost \$400. (Lately noted.)

Va., Craigsville.—Pastures District School Board, W. H. East, Clerk, let contract to G. W. Fretwell, Staunton, Va., to erect 8-room school; brick; metal roof; wood floors; cost \$15,000. (Lately noted.)

W. Va., Adamston.—Board of Education, Coal Dist., Harrison County, let contracts to Richards Construction Co., Clarksburg, W. Va., to erect schools at Adamston and Hepzibah, W. Va.; brick; built-up roof; cement and wood floors; cost \$13,000 and \$12,000, respectively; Holmboe & Lafferty, Architects, Clarksburg, W. Va. (Lately noted.)

W. Va., Hepzibah.—See W. Va., Adamston.

STORES

Ala., Ashland.—H. L. Wynn let contract to H. L. Adair, Ashland, to erect store building; brick; 50x25 ft.

Fla., Miami.—Quinn & Reed let contract to Wolf & Ewing to erect store and apartment-house; 3 stories; 55x66 ft.; concrete and hollow tile; composition roof; mill floor construction; stores on lower floor; 8 apartments above; cost \$15,000; E. A. Nolan, Architect, Miami. (Lately noted.)

Fla., St. Petersburg.—J. Allen Smith let contract to erect apartment-house and store building. (See Apartment-houses.)

Fla., St. Petersburg.—St. Petersburg Investment Co. let contract to Rising Construction Co., St. Petersburg, to erect 3-story brick building at Central Ave. and 5th St.; brick and reinforced concrete; 42x70 ft.; store on first floor; apartments above; Henry H. Dupont, Archt., St. Petersburg. (Lately noted.)

Ga., Macon.—S. F. Fulghum & Co., Macon, have contract to erect three 2-story brick buildings on 1st St.; cost \$10,000.

Ga., Metter.—T. H. Kingery let contract to O. S. Puckett, Metter, to erect store building; 1 story; brick; 2 stores.

La., New Orleans.—J. B. Levert, agent, let contract to erect 2-story building in Carondelet St.; 78x160 ft.

Mo., Kansas City.—Mrs. Emma Eysell let contract to erect flat and storerooms. (See Apartment-houses.)

Okla., Enid.—Geronimo Company let contract to J. Shaw, Enid, to erect building.

S. C., Charleston.—James F. Condon & Sons will erect 2-story brick building for annex to present structure; 50x40 ft.; tin roof; \$600 elevator; M. S. Stoppelheim, Contractor, Charleston; completion by Sept. 15.

Tex., Port Arthur.—W. C. Tyrell let contract to McDaniels & Hartford, Port Arthur, to erect 2-story brick business building; 25x134 ft.; cost \$5600, exclusive of plumbing, electrical wiring, etc.; F. W. Steinman, Archt., Beaumont.

THEATERS

D. C., Washington.—Rialto Theater, 9th & G Sts., let contract to Michael A. Weller & Co., 709-701 Equitable Bldg., Washington, to erect theater; 1 story; 100x141 ft. and 70x100 ft.; seating capacity about 2000; fireproof; slag or composition roof; wood and cement floors; steam heat; electric lights; cement sidewalks; Blanke & Zink, Architects, Equitable Bldg., Baltimore, Md. (Lately noted.)

Tex., Corsicana.—M. L. Levine let contract to J. E. Metcalf, Corsicana, to erect addition to moving-picture theater; cost \$25,000; seating capacity 900.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Asphalt, etc.—W. S. Fallis, State Highway Engr., Commercial National Bank Bldg., Raleigh, N. C.—Catalogs of asphalt, tar, road oil, etc.

Asphalt Machinery.—Good Roads Com., J. T. Pinkston, Engr., Meridian, Miss.—Bids until July 31 to furnish asphalt distributing machinery on motor truck.

Bank Fixtures.—Charlotte Morris Plan Co., Trust Bldg., Charlotte, N. C.—Prices on bank fixtures.

Beltting.—Oakdale Hosiery Mill, S. N. Oakley, Oakdale, Tenn.—Beltting.

Boilers.—See Heating Apparatus.—Harrison Bros. & Co.

Bottle Stoppers.—See Glass Bottles, etc.—J. W. Meldrim.

Bridge Construction.—Washington County Supvrs., W. W. Miller, Clerk, Greenville, Miss.—Bids until August 6 to construct reinforced concrete bridge over Granicus Bayou on Greenville-Lake Washington Rd.; specifications and diagram on file with Chief Engr. of Highway Com. and at office Clerk Board of Supvrs.; detailed plans and specifications for bridge to be submitted to J. S. Allen, Chief Engr.

Bridge Construction.—Office of State Highway Commission, G. P. Coleman, State Highway Commr., Richmond, Va.—Bids until July 18 at office of Campbell County Clerk, Rustburg, Va., to construct steel bridge, consisting of three 35-ft. beam spans over Buffalo Creek on J. J. Davis Rd.; plans and specifications on file with County Clerk at Rustburg and with State Highway Commission, Richmond; further information from Mr. Coleman.

Broom (Horse-drawn).—Good Roads Com., J. T. Pinkston, Engr., Meridian, Miss. Bids until July 31 to furnish rotary horse-drawn broom.

Buckets (Excavating).—Roy C. Whayne Supply Co., Louisville, Ky.—Two 1½ or 1½-yd. orange-peel buckets and two 4-cu.-yd. clamshell buckets.

Canning Equipment.—A. M. Cohen, Pensacola, Fla.—Data and prices on machinery to smoke and can fish.

Cars.—See Mining Equipment.—Clover Gap Coal Co.

Cars.—Bear Coal Co., C. A. Malcolm, Mgr., Clute, W. Va.—1-ton mine cars.

Cars.—Locust Hill Coal Co., E. G. Buck, Prest., Tacoma, Va.—Coal cars.

Cement.—Charles L. Pyron, Reynolds, Ga.—Cement.

WAREHOUSES

Ga., Lagrange.—Cash Exchange let contract at \$17,550 to West Point Iron Works, West Point, Ga., to erect and equip warehouse; provide potato-curing plant; completion by Oct. 1.

Md., Baltimore.—Baltimore Dry Docks & Shipbuilding Co. let contract to West Construction Co., American Bldg., Baltimore, to erect warehouse. (See Bank and Office.)

Mo., Kansas City.—Montgomery Ward & Co. let contract to Wells Bros. Construction Co., Chicago, to erect warehouse; 10 stories; 108x182 ft.; concrete construction; McKeekule & Trask, Architects, Kansas City. Construction in progress. (Previously noted.)

Mo., Kansas City.—Monarch Transfer & Storage Co. let contract to Otto Brettag, 229 Midland Bldg., Kansas City, to erect storage building; 55x110 ft.; 5 stories; reinforced concrete and brick; reinforced concrete and composition roof; flat-slab floor construction; steam heat on first floor; electric lights; concrete sidewalks; electric freight elevator, capacity 5000 lbs.; cost \$48,000. Address contractor. (Lately noted.)

Va., Norfolk.—Norfolk Warehouse Corporation, J. C. Prince, Supt., let contract to Baker & Brinkley, Norfolk, to erect 4 warehouses in Atlantic City; 36x36 ft. each; 1 story; brick; Tarock floors; gravel roof; cost \$18,000.

Coal-handling Plants.—Bureau of Yards and Docks, F. R. Harris, Ch., Navy Dept., Washington, D. C.—Bids until July 23 for 2 coal-handling plants, one at Norfolk (Va.) Navy-Yard and other at Philadelphia (Pa.) Navy-Yard; specifications (No. 2451) and drawings obtainable from Bureau of Yards and Docks, Washington, D. C., or to commandants of navy-yards named.

Columns (Wood).—Ahsokle Building Supply Co., Ahsokle, N. C.—Columns 12 in. diam., 18 ft. long; also 12 ft. long.

Conduit Construction.—City of Cumberland, Md., Ralph L. Rizer, City Engr., City Hall.—Bids until July 23 to construct concrete conduit in Dry Run at German St.; work embraces 250 ft. concrete conduit, 22½ sq. ft. concrete bottom for present conduit, etc.; plans and specifications obtainable from City Engr. for \$1.

Contractors' Supplies.—M. J. Danson, 71 Warren St., New York.—Contractors' supplies; new or second-hand.

Concentrating Mill.—P. O. Box 843, Asheville, N. C.—To buy or lease gold concentrating and crushing mill; for lease must be in good order and near railway in Virginia, or North Carolina, or South Carolina, line.

Cordage Machinery, etc.—Ricardo Tuyet, Barcelona, Spain.—Machinery for manufacturing cables of hemp, fiber, etc., of large diameter, for marine use; also addresses of manufacturers of and dealers in binder twine, to take the place of hemp twine, for use with reapers and harvesters.

Crane (Locomotive).—Roy C. Whayne Supply Co., Louisville, Ky.—Two or more traveling cranes, steam or electric, to handle 1½ to 1½-yd. orange-peel bucket at 25 ft.

Crusher.—Road Dist. No. 2, C. M. St. Martin, representative, Houma, La.—Oyster and shell crusher; 500 to 1000 bbls. daily capacity.

Derricks.—Roy C. Whayne Supply Co., Louisville, Ky.—Two stiff-leg traveling derricks; 75-ft. boom; capable of operating 4-cu.-yd. clamshell bucket.

Dike Construction.—A. G. Fegwell, Pendleton, S. C.—To let contract for 3 mi. dike; good work for small Thew shovel.

Doors (Fireproof).—J. N. Gorman, Greenville, N. C.—Names and addresses of manufacturers of drop fireproof doors.

Dynamos.—Oakdale Hosiery Mill, S. N. Oakley, Oakdale, Tenn.—Small dynamos; install 20 H. P. electric drive.

Electric-lighting System.—City of Ashland, Ky., F. W. Gesling, City Engr.—Bids until Aug. 6 for constructing and erecting ornamental street-lighting system; plans and specifications on file.

Electric Plant.—R. Amos, Allport, Ark.—Prices on electric plant for educational industrial and mechanical school building.

Electric-light Plant.—Hackley Morrison, 16½ N. 9th St., Richmond, Va.—10 K. W. A. C. 1, 2 or 3-phase generator, 6 transformers and wire for ¾ mi. pole line.

Electric-light Systems.—Bureau of Yards and Docks, F. R. Harris, Ch., Navy Dept., Washington, D. C.—Bids until July 30 for electric-lighting systems for foundry and machine shop at navy-yard, Norfolk, Va.; specifications (No. 2458) and drawings obtainable from Bureau or commandant of navy-yard named.

Elevator.—J. F. Adamson, Mannington, W. Va.—Electric equipped push-button control elevator for 3-story store building.

Elevator.—J. Leo Kolb, 923 New York Ave. N. W., Washington, D. C.—Correspondence with manufacturers of freight elevators or dumbwaiters.

Elevators.—Treasury Department, Supervising Architect's office, Washington, D. C.—Bids until July 23 for installation of elevator plant in connection with extension to each of following buildings: United States postoffice and courthouse at East St. Louis, Ill.; Huntington, W. Va., and Nashville, Tenn.; drawings and specifications; copies at discretion of architect.

Engine.—Stanton Foundry & Machinery Co., Palatka, Fla.—Second-hand 16 or 18 H. P. gasoline or kerosene engine.

Engine.—Southern Supply Co., 415 Water St., Norfolk, Va.—200 H. P. Corliss engine.

Engine.—Geo. G. McLaughlin Mfg. Co., 24 Washington St., North, Boston, Mass.—Steam engine; immediate delivery; 17x24 or 18x26; right-hand; throttling governor; Houston, Stanwood & Gamble preferred.

Fertilizer Machinery.—A. M. Cohen, Pensacola, Fla.—Data and prices on machinery to manufacture fertilizer from refuse of fish smoking and canning plant.

Filter, etc.—George H. Bailes, Anderson, S. C.—Water filter for 40x100-ft. pool; vacuum cleaner; 2 H. P. electric motor.

Filters (Water).—Bureau Supplies and Accounts, Navy Department, Washington, D. C.—Bids until July 24 for furnishing and installing cold and hot-water filters at Naval Academy, Annapolis. Apply for proposals.

Flour Mill.—B. F. McGraw, Pulaski, Tenn.—Second-hand roller mill for grinding 50 bbls. flour and 300 bu. cornmeal daily.

Flywheel.—D. C. & E. Mining Co., Louisville, Ky.—Belt flywheel; prefer in halves; diam. 12 ft.; face 24 in.; bore 9 in.; weight 6 tons.

Forges, etc.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C.—72 blacksmith forges and 62 rivet forges; union and platform scales; pressed steel wheelbarrows; blacksmith's anvils, etc.; schedule 1329.

Glass Bottles, etc.—J. W. Meldrim, Fort Green, Fla.—Names and addresses of manufacturers of glass bottles and cork bottle stoppers.

Hardware.—See Machinery.—Luis Villegas Barreneche.

Hardware, etc.—Navy Dept., Bureau of Supplies and Accounts, Washington, D. C. Pine and chain wrenches; vises; trowels; shovels; screws; pots; pliers; picks; nippers; knives; hammers; calipers; dyes, etc.; schedule 1337.

Heating Apparatus.—R. Amos, Allport, Ark.—Prices on heating apparatus for 2½-story building with annex 20x40 ft.

Heating Apparatus.—Harrison Bros. & Co., Williamston, N. C.—Names and addresses of manufacturers of boilers and radiators for heating plants.

Heating Equipment.—M. W. Stone, Secy. School Board, Route No. 3, Meridian, Miss. Prices on hot-water or other kinds of heating equipment for \$4500 school.

Heating Plant.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 25 to install furnaces at School No. 25, Bond near Fleet St.; drawings and specifications on file with J. J. Byrne, Building Inspector.

Heating Systems.—Bureau of Yards and Docks, F. R. Harris, Ch., Navy Dept., Washington, D. C.—Bids until July 30 to install heating systems for foundry and machine shops at navy-yard, Norfolk, Va.; specifications (No. 2466) and drawings obtainable from Bureau Yards and Docks, Washington, D. C., or commandant of navy-yard named.

Hoisting Equipment.—Bear Coal Co., C. A. Malcolm, Mgr., Clute, W. Va.—10 H. P. hoisting engine and drum.

Ice Plant Supplies.—Johnson City Coal, Ice & Ice Cream Co., Johnson City, Tenn.—Homogenizer for quick shipment; also cooling coils.

Knitting Machinery.—Oakdale Hosiery Mill, S. N. Oakley, Oakdale, Tenn.—Best grade hosiery knitting machines; probably buy 40.

Lathe.—Hoffman Oil & Refining Corp., H. H. Hoffman, Prest., Houston, Tex.—Prices on turning lathe.

Lathes (Engine).—Geo. G. McLaughlin Mfg. Co., 24 Washington St. N., Boston, Mass.—36-in. x 30-ft. and 24-in. x 16-ft. engine lathes; need not be modern pattern.

Levee Construction.—U. S. Engr. office, Queen and Crescent Bldg., New Orleans, La.—Bids until July 24 to construct 1,206,000 cu. yds. earthwork in Lower Tensas and Barataria Levee Dists.; information on application.

Locomotive.—Gulf Cup & Still Co., Pensacola, Fla.—3 or 4-ton gasoline locomotive for narrow (36 in.) gauge.

Machinery.—Luis Villegas Barreneche, Mech. Engr., Popayan, Colombia, S. A.—Catalogs and prices, in Spanish if possible, on machinery, hardware and everything relating to mechanics.

Machinery.—Charles L. Pyron, Reynolds, Ga.—Machinery.

Machine Tools.—Bureau Supplies and Accounts, Navy Department, Washington, D. C.—Bids until July 24 for delivering tool-room and turret lathes, latvories, boring, drilling, grinding, and mill machines and planer at navy-yard, Philadelphia. Apply for proposals to supply officer, navy-yard, Philadelphia, or to Bureau.

Machine Tools.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C. Motor-driven 36-in. vertical turret lathe, schedule 1340; four 24-in. swing high-duty drills; 10 geared head stock heavy-duty engine lathes; motor-driven toolroom lathe; motor-driven flat 2-spindle turret lathe; motor-driven universal milling machine; horizontal boring and milling machine; heavy pattern 84-in. boring and turning mill; schedule 1341.

Manufactures.—Wm. G. Landgren, manufacturers' agent, 95 York St., Sydney, New South Wales, Australia.—To represent manufacturers of aluminum ware; enamelware; glassware; earthenware; brushware; lampware; gas and electric globes, lamps and lanterns; window glass; plate glass; cathedral glass; automobile accessories; leather specialties; harness; firearms; household goods and specialties; oilcloth; roofing; stoves; ovens; veneers; woodenware; wheelbarrows; wire fencing; wire netting; gates; general hardware.

Manufacturers.—Tsuro Sasaki, 200 Fifth Ave., New York.—Data and prices on manufactured products; especially patented articles made by machinery.

Marble.—J. F. Adamson, Mannington, W. Va.—Prices on marble for wainscot and counters for Arlington Hotel.

Mechanical Supplies.—General Purchasing Officer of Panama Canal, Washington, D. C. Bids until Aug. 6 for furnishing: Steel and wrought-iron grills and gates; iron balustrades; brass railings; push and hand cars; fire extinguishers; power shears; leather belting; rubber tires; packing; boiler lagging, etc.; blanks and information (circular 1156) obtainable from office Panama Canal and offices of Asst. Purchasing Agents at New York, New Orleans, Fort Mason and San Francisco; also from U. S. Engr. offices in principal cities.

Milk Apparatus.—R. Yezoye Sons & Co., Tokyo, Japan.—Milk apparatus.

Milk Supplies.—M. J. Danson, 71 Warren St., New York.—Milk supplies; new or second-hand.

Mining Equipment.—Hines Collieries Co., H. E. Hines, Prest., Princeton, W. Va.—Mining equipment for 1600-acre development to 1000 tons coal daily.

Mining Equipment.—Clover Gap Coal Co., L. A. Bowling, Prest.-Mgr., Blackjoe, Ky.—Mine cars, rails, tippie scales, railroad scales, shaker screens, etc.

Mining Machinery.—Will H. Layne, Hopkins Bldg., Prestonburg, Ky.—Data and prices on coal-mining machinery.

Motor.—American Forge & Machine Co., Canton, O.—230 D. C. motor. (See Planers.)

Motor (Electric).—George H. Bailes, Anderson, S. C.—2 H. P. electric motor.

Motors (Electric).—P. E. Costopoulou, P. O. Box 366, Alexandria, Egypt.—1½ H. P.

100-volt 40-period A. C. M. P. generator; 3 H. P. 200 volts 40 periods.

Motors (Spring).—See Phonograph Supplies.—Troutdale Furniture Mfg. Co.

Nail Machinery.—P. E. Costopoulou, P. O. Box 366, Alexandria, Egypt.—Machinery to manufacture nails from wire rods.

Nails (Wood).—Tarver Shipbuilding Co., Beaumont, Tex.—Prices on locust treenails; 6000 1½-in., 28 in. long; 4000 1½-in., 26 in. long.

Organs (Reed).—White Furniture Co., 212 Lothbury Ave., Middlesboro, Ky.—Names and addresses of manufacturers of parlor organs.

Paper Boxes.—J. W. Meldrim, Fort Green, Fla.—Names and addresses of manufacturers of paper boxes.

Paving.—Tennessee River Bridge Com., Theo. F. King, Chrmn., Chattanooga, Tenn. Bids until July 26 to pave with asphalt and asphaltic concrete Market St. bridge from 1st to Frazier St. in North Chattanooga, exclusive of bascule span now paved; proposal forms, plans, specifications, etc., furnished for \$5 by County Engr., County Courthouse.

Paving.—Council Committee on Streets, Lynchburg, Va.—Bids until July 21 to construct rubble stone roadway on Campbell Courthouse Turnpike; also to construct granolithic sidewalks. H. L. Shaner, City Engr., will furnish further particulars.

Paving.—City Comms., Huntington, W. Va.—Bids until July 25 to grade, curb and pave sections of Fifth and Sixth Sts.; No. 1 vitrified paving brick; details, profiles, drawings and specifications on file with A. B. Maupin, City Engr. O. H. Wells, Commr. Streets, etc.

Paving.—City of Maryville, Tenn., S. M. Everett, Mayor.—Bids until July 26 for paving; 6000 cu. yds. excavation, 22,000 sq. yds. paving and 12,000 lin. ft. curb and gutter; pave with asphalt, asphaltic concrete, brick or wood block, as may be determined; plans, blank forms, etc., obtainable from R. C. Huston, Consult. Engr.

Paving.—City of Williamsburg, Ky., C. G. Ellison, Mayor.—Bids until July 23 to grade, curb and resurface with tarvia macadam Main St. from river bridge to railroad crossing at depot; plans and specifications on file with J. E. Terry, City Clerk.

Paving.—City of Staunton, Va., S. D. Holsinger, Gen. Mgr., Crowle Bldg.—Bids until July 20 to construct 3400 sq. yds. paving on Middlebrook Ave. and 650 sq. yds. on South New St.; vitrified block; specifications and information from Gen. Mgr.

Paving.—City of Montezuma, Ga., James Harrison, City Clerk.—Bids until Aug. 15 to pave 12,000 sq. yds. with vitrified brick, cement-concrete, bituminous concrete, bituminous macadam or creosoted wood blocks, with necessary granite or concrete curbing; plans and specifications at office City Clerk and of Arthur Pew, Consult. Engr., Forsyth Bldg., Atlanta.

Paving.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 25 to grade and pave with cement-concrete alleys listed in Private Alley Contracts Nos. 40, 41, 45 and 46; specifications and proposal sheets furnished by R. M. Cooksey, Highways Engr., City Hall.

Pipe Machine.—Keystone Pipe & Supply Co., Butler, Pa.—3 or 4-in. second-hand pipe machine.

Piping.—City of Commerce, Okla., J. S. Denton, Mayor.—Prices on 4-in. cast-iron water pipe.

Phonograph Supplies.—Troutdale Furniture Mfg. Co., Troutdale, Va.—Names and addresses of manufacturers of phonograph motors, sound boxes, etc.

Planer.—American Forge & Machine Co., Canton, Ohio.—48x48-in. x 12-ft. planer; 2 heads on rail; prefer with 220 D. C. motor attached.

Power Equipment.—W. S. Fallis, State Highway Engr., Commercial National Bank Bldg., Raleigh, N. C.—Catalogs of farm power equipment.

Rails.—See Mining Equipment.—Clover Gap Coal Co.

Rails.—Bear Coal Co., C. A. Malcolm, Mgr., Clute, W. Va.—16 and 60-lb. steel rails; new or relay.

Refinery Equipment.—Hoffman Oil & Refining Corp., H. H. Hoffman, Prest., Houston, Tex.—Data and prices on petroleum refinery equipment, to include electrically-driven oil pumps.

Reinforcing Material.—Charles L. Pyron, Reynolds, Ga.—Reinforcing for cement.

Road Construction.—Covington County

Board of Revenue, Andalusia, Ala.—Bids until Aug. 13 to grade, drain and surface with sand-clay 4½ mi. of road from Escambia County line east; J. M. Garrett, County Engr.

Road Construction.—Mingo County Court, Williamson, W. Va.—Bids until Aug. 4 to construct 35 mi. earth road; 3 sections; plans and specifications on file; for information address Blake Taylor, County Road Engr., Williamson.

Road Construction.—Hillsborough County Comms., Jas. G. Yeats, Chrmn., Tampa, Fla.—Bids until Aug. 14 to construct hard-surfaced roads in Citrus Park Special Road and Bridge Dist.; specifications obtainable from County Comms.

Road Construction.—Henry County Commissioners, Abbeville, Ala.—Bids until Aug. 13 to grade and surface with sand-clay road between Headland Browns Cross Rds.; plans and specifications on file with State Highway Dept., Montgomery, and with Probate Judge, Courthouse, Abbeville; additional information from W. S. Keller, State Highway Engr., Montgomery.

Road Construction.—Hillsborough County Comms., Jas. G. Yeats, Chrmn., Tampa, Fla.—Bids until Aug. 14 to construct hard-surfaced roads in Wimauma Special Road and Bridge Dist.; specifications obtainable from County Comms.

Road Construction.—McCracken County Comms., Gus G. Singleton, County Clerk, Paducah, Ky.—Bids until July 21 to grade and gravel Section 3 of Ogden Landing Rd. and improve 1.1 mi. of Mayfield inter-county seat road with tarvia macadam; plans, profiles and specifications on file with R. H. Young, Civil Engr. Ogden Landing Road will require: Excavation, 26,540 cu. yds.; gravel, 9055 cu. yds.; concrete, 857 cu. yds.

Road Construction.—Road Comms. Sunflower County, Dist. No. 5, Indianola, Miss.—Bids until August 7 to construct 25 mi. gravel road; plans and specifications on file with John W. Johnson, Chancery Clerk; copies obtainable from H. S. Stansel, Engr., Ruleville, Miss., for \$2.50.

Road Machinery.—Rodolfo Huber, Compostela 90-92, Ant., Havana, Cuba.—Road-leveling machinery; new or second-hand; quick delivery.

Road Machinery, etc.—W. S. Fallis, State Highway Engr., Commercial National Bank Bldg., Raleigh, N. C.—Catalogs of road rollers, dump wagons, wagon-loading machinery, asphalt, tar, road oil, road signs, motor trucks, steam tractors, rural telephone system appliances, rural lighting systems, farm power equipment, etc.

Road Construction.—Comms. Lawrence County Road Improvement District No. 3, J. R. Spence, Prest., Walnut Ridge, Ark.—Bids until August 2 to construct 5.78 mi. macadam road; 11,317 tons crushed stone; 20,000 cu. yds. grading; 5.75 acres clearing; 5 acres grubbing; 6.41 mi. fencing; 24 lin. ft. 15-in., 168 lin. ft. 18-in., 48 lin. ft. 20-in., 288 lin. ft. 24-in., and 96 lin. ft. 30-in. pipe culverts; 70 cu. yds. reinforced concrete; 64 cu. yds. plain concrete; 190 lin. ft. steel bridges; plans and specifications on file and blank forms obtained at office F. A. Pritchett, Engr., Walnut Ridge, or of Ponder, Gibson & Ponder, Walnut Ridge.

Road Construction.—Oldham County Commissioners, Wm. Balfour, County Judge, Vega, Tex.—Bids until July 23 to construct 50 mi. road, including grading and bridges; specifications obtainable from Hess & Skinner, Engrs., Dallas, Tex., for \$5; separate bids may be made on bridges and culverts.

Rolling Mill.—Dixie Steel Corp., Metropolitan Bank Bldg., New Orleans, La.—Plant for 24-hr. capacity 200 tons bar steel, bolts, nuts, etc.; equipment to include electric motors, traveling train equipped for electric magnet, automatic charging apparatus, etc.; consider new and second-hand machinery. (Latesty noted.)

Boiler Tubes.—Lock Box 41, Phillipsburg, N. J.—500 boiler tubes, 4-in. diam. by 18 ft. long.

Safe.—Charlotte Morris Plan Co., Trust Bldg., Charlotte, N. C.—Prices on safe.

Saws.—C. H. Satterwhite, Roanoke Rapids, N. C.—3 or 4 circular saws of different sizes.

Scales.—See Mining Equipment.—Clover Gap Coal Co.

Sewer Construction.—D. W. Womack, City Clerk, Frederick, Okla.—Bids until July 24 to construct 3200 lin. ft. vitrified salt-glazed sewer pipe, manholes, catch-basins, trenching and pipe laying; specifications on file with City Clerk.

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Sewer Construction.—District Commrs., 500 District Bldg., Washington, D. C.—Bids until July 20 to construct 600 lin. ft. 3-ft. 6-in. diam. masonry sewer; proposal forms, specifications and information from Chief Clerk, Engr. Dept., Room 427 District Bldg.

Sewer Construction.—City Com., Knoxville, Tenn.—Bids until July 24 to extend sanitary sewer; plans and specifications on file with J. B. McCalla, City Engr. John W. Fleniken, Commr. Streets and Public Improvements.

Sewer Construction.—City Commrs., office of City Auditor, City Hall, Tulsa, Okla.—Bids until July 24 to construct sanitary sub-main sewer as follows: 8-in. sewer costing \$380 from present system easterly in Wakefield Addition for outlet system for part of Hillcrest Addition; 12-in. sewer east from Lewis Ave., north in Kendall Village and serving as outlet to northeasterly part of Hillcrest Addition; 12-in. sewer costing \$790 from Rockford to Zunis as outlet to Hillcrest Addition; plans, profiles and specifications on file with H. H. Wye, City Engr.

Sewers.—City of Maryville, Tenn., S. M. Everett, Mayor.—Bids until July 26 for constructing 12 mi. sanitary sewers; to include 40,000 ft. 8-in., 8000 ft. 10-in., 5000 ft. 6-in., 4000 ft. 12-in. and 3000 ft. 15-in. vitrified sewer pipe; also include 125 manhole covers, 20 tons cast-iron pipe, 45 syphons for flush tanks, 1000 bbls. Portland cement, 150,000 sewer bricks, 40,000 ft. lumber, etc.; plans, blank forms, etc., from R. C. Huston, Const. Engr.

Sewer Construction.—City Commrs., Huntington, W. Va.—Bids until July 30 to construct relief sewer in South Side; 800 ft. 15-in. tile and 845 ft. 12-in. tile; A. B. Maupin, City Engr.; O. H. Wells, Commr. Streets, Sewers, etc.

Sewage-treatment Plant.—City of Waxahatchie, Tex., Will D. Hines, Secy.—Bids until July 23 for constructing sewage-treatment plant and outfall line to connect with present sewerage system; bids until July 23; blank forms, etc., obtainable (for \$15 deposit) from Will D. Hines, City Secy., and M. Griffin O'Neil & Sons, Const. Engrs., Praetorian Bldg., Dallas, Tex.

Shafting.—Oakdale Hosiery Mill, S. N. Oakley, Oakdale, Tenn.—Shafting.

Shafting, etc.—Gress Mfg. Co., Jacksonville, Fla.—2 7-16, 3 7-16 and 1 15-16 shafting and pillow boxes.

Skidder.—Stanton Foundry & Machinery Co., Palatka, Fla.—Double drum skidder; second-hand preferred; immediate delivery.

Steel, etc.—M. J. Danson, 71 Warren St., New York.—Steel and iron plates; new or second-hand.

Steelworking Machinery.—R. Yezoye Sons & Co., Tokyo, Japan.—Shearing machine to cut down steel sheet at steel safe factory; steel sheet (plate) bending machine for steel safe makers to bend sundry steel plates by hydraulic or power system.

Syrup Machine.—Hackley Morrison, 164 N. 9th St., Richmond, Va.—No. 2 1/2 hand-filling syrup machine; Baxter & Sons preferred.

Tools, etc.—M. J. Danson, 71 Warren St., New York.—Twist drills, files, etc.; new or second-hand.

Tanks.—Lock Box 41, Phillipsburg, N. J. Four round closed tanks; 10,000-gal. capacity or larger.

Textiles, etc.—Eliseo del Valle, Dr. Coss No. 142, Monterey, N. L., Mexico.—To represent manufacturers of textiles, toys, tinware, glassware, enamelware, etc.

Toothpick Machinery.—J. S. Henson, 705 W. Main St., Palestine, Tex.—Data and prices on machinery for manufacturing toothpicks and other similar small wood products.

Tractors (Steam).—See Road Machinery, etc.—W. S. Fallis.

Telephone Systems.—W. S. Fallis, State Highway Engr., Commercial National Bank Bldg., Raleigh, N. C.—Catalogs of rural telephone system appliances.

Tile.—J. F. Adamson, Mannington, W. Va. Prices on floor and wall tile for bathrooms, toilet-rooms and public toilet in Arlington Hotel, also floor tile, and face tile and Mosaic tile for front of store building.

Tree Transplanters.—Cary C. Moody, Indianola, Miss.—Names and addresses of manufacturers of tree transplanters.

Turpentine.—Rodolfo Huber, Compostela 992 Ant., Havana, Cuba.—Oil of turpentine in large quantities.

Twine.—See Cordage Machinery, etc.—Ricardo Tuyet.

Vacuum Cleaner.—See Filter, etc.—George H. Bailes.

Vault.—Charlotte Morris Plan Co., Trust Bldg., Charlotte, N. C.—Prices on vault.

Wagons.—W. S. Fallis, State Highway Engr., Commercial National Bank Bldg., Raleigh, N. C.—Catalogs of dump wagons.

Water Equipment.—M. W. Stone, Secy. School Board, Route No. 3, Meridian, Miss. Prices on water equipment, pump, gasoline engine and tank, etc., for \$4500 school.

Well-drilling Equipment.—Will H. Layne, Hopkins Bldg., Prestonburg, Ky.—Data and prices on machinery for gas and oil developments.

Well-drilling Machinery.—T. M. Jenkins, R. R. No. 1, Fort Pierce, Fla.—Outfit for drilling artesian wells.

Wharf Construction.—City of Houston, Tex., office of City Secy.—Bids until July 30 to construct wharf at foot of Main St.;

specifications and information from E. E. Sands, City Engr.

Wire Rope.—Pearl Coal Co., C. A. Malcolm, Mgr., Clute, W. Va.—4000 ft. 3/4-in. wire rope for incline plane.

Wire Rope.—M. J. Danson, 71 Warren St., New York.—Wire rope; new or second-hand.

Woodworking Equipment.—C. E. Northrup & Son, Gallatin, Tenn.—Universal woodworker and self-feed rip saw.

Woodworking Machinery.—C. H. Satterwhite, Roanoke Rapids, N. C.—Boxmaking machine; planer and matcher; 3 or 4 circular saws of different sizes.

Woodworking Machinery.—Southern Supply Co., 415 Water St., Norfolk, Va.—Several nailing machines; Morgan's preferred, with open back 22 and 36 in.; Chase turbine double-end tenoning machine.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Florence.—Survey is to begin July 19 for the Northern Alabama Traction Co.'s proposed line from Florence via Athens to Huntsville, Ala., 64 mi.; branch to Lexington, 12 mi. Central Construction Co. of Indianapolis, Ind., begins work Sept. 1, construction to be finished in two years. Michael Wilkins will have charge of survey and work. Thurston H. Allen of Florence and others interested.

Ky., Providence.—Illinois Central Railroad has let contract to L. J. Smith Contracting Co., Commerce Bldg., Kansas City, Mo., to build line from Dawson Springs to Providence, 17 1/2 mi., which will include handling about 600,000 cu. yds. of material, mostly rock. Same road also let contract to Walsh Construction Co. of Davenport, Ia., to revise grades and alignment from Scottsburg to Dawson Springs, Ky., 11 1/2 mi., which will include 700,000 cu. yds. of material, mostly rock; also bridge with 75-ft. span and trestle approach over Tradewater River. A. S. Baldwin, Chicago, is Chief Engr.

Md., Baltimore.—Pennsylvania R. R. contemplates building freight yards and another branch from near Bayview Junction to increase facilities to and from the Sparrows Point plant of the Bethlehem Steel Co. Engineers preparing plans. J. C. Auten, Wilmington, Del., is Pr. Asst. Engr.

Okla., Buffalo.—Contract is reported awarded to K. Y. Walker of Fort Worth, Tex., for the construction of the Buffalo & Northwestern R. R. from Waynoka to Buffalo, Okla., 52 mi., by the Taylor, Walker & Bell Construction Co. Final survey will begin immediately. Santa Fe system has option on the road when built.

Okla., Ralston.—Contract for construction of the Osage & Santa Fe Railway from Ralston to Owen, Okla., about 62 miles is reported let to Maney Brothers of Oklahoma City.

Okla., Tulsa.—Oklahoma Union Traction Co. has completed and put in service from Tulsa to Red Fork, 4 mi., the first section of its interurban electric railway. The next objective is Sapulpa. I. F. Crow is Pres.

S. C., Spartanburg.—Southern Railway will build spur track over a mile long to the proposed army camp. S. C. Moses, Spartanburg, is Res. Engr.

Tenn., Collinwood.—Wayne-Hardin Railroad Co. will make new survey for line from Collinwood to Savannah, Tenn., about 49 miles via Turkey Creek. F. W. Reed is Ch. Engr.

Tex., Dallas.—Dallas Southwestern Traction Co.'s proposed line from Dallas to Irving and Cleburne, Tex., for which contract previously reported let to Creek Construction Co. of Sapulpa, Okla., will be 59 mi. long. F. R. Perkins, 303 Gaston Bldg., Dallas, is Engr. (See Manufacturers Record June 7.)

Tex., Fort Worth.—Hart Belt Line Railway Co., capital stock \$50,000, of which \$5000 is paid in, is chartered to build a line about 1 1/4 mi. long from connection with Rock Island and Santa Fe lines to D. Hart's packing-house and independent stockyards. May build, if desired, to other industries. Incorporators, D. Hart, M. A. Hart and D. Hart, Jr.

Tex., Freeport.—Freeport Sulphur Co. is not ready to make definite announcement about proposed electric railway from Freeport via Rosenberg to Houston, Tex., about 100 mi., except that survey is in progress.

Tex., San Antonio.—San Antonio Public Service Co., capital stock \$4,700,000, of which \$100,000 is paid, is chartered to build electric railways from San Antonio to other points

in Texas as well as in the city of San Antonio; also to conduct electric-light and power and gas business. Subscribers, W. B. Tuttle, \$65,000; Walter P. Napier, \$2500; R. C. Jones, \$2500, all of San Antonio. Mr. Tuttle is V.-P. and Gen. Mgr. and Mr. Jones Secy. and Treas. of the San Antonio Traction Co. Directors, Emerson McMillan, who is Pres., and A. P. Lathrop, V.-P. of the Traction Co., both of New York; W. B. Tuttle, W. P. Napier, R. C. Jones, S. J. Brooks and Howard Templeton, all of San Antonio.

INDUSTRIAL NEWS OF INTEREST

A Change of Ownership.

It is announced by the Lodge & Shipley Machine Tool Co., Cincinnati, O., that Mr. Murray Shipley has sold his entire interest in the company and has severed his connection with it.

An Official Design.

The resignation of C. W. Owen as general sales agent of the Virginia Iron, Coal & Coke Co., in order to make another business connection, is announced with regret by President John B. Newton, who says that pending the appointment of Mr. Owen's successor all communications should be addressed to Sales Department, Virginia Iron, Coal & Coke Co., Roanoke, Va.

Atlantic Marble & Tile Co.

The Atlantic Marble & Tile Co. has been organized to succeed the Toffoli & Marus Marble & Tile Co., Charlotte, N. C., according to a formal announcement just made by the latter. H. C. Federal will be associated with the new organization as general manager, while A. F. Toffoli and J. R. Marus will personally look after the installation and execution of all contracts.

An Expanding Business.

The Picard Laboratories, analytical and consulting chemists, is the change of name of the business of D. C. Picard, 1911 First Ave., Birmingham, Ala., according to announcement. Mr. Picard continues as sole owner of the business, the change having been made on account of its constantly increasing work which demanded an organization on broader lines. Postoffice address is Box 631.

A Productive Bauxite Mine.

A new mine in the central part of Georgia is producing already 30 tons of bauxite per day, which the Ferguson test shows to contain over 38 per cent. of soluble alumina, according to announcement of the K. T. Vanderbilt Co., 50 E. 42d St., New York City, who are dealers in white clays, whiting and barytes.

Southeastern Representative Appointed.

The Walter A. Zelnicker Supply Co. and affiliated companies are now represented in the Birmingham district by Thomas A. Hamilton who, for the past 14 years has been connected with the Crane Company, prior to which he was superintendent of the East St. Louis plant of the Zelnicker Car Works. He will have charge of both buying and selling in the Southeastern territory and his office will be at 1018 Woodward Bldg., Birmingham, Ala.

Change of Business Connection.

John D. Hobbs, Box 363, Tampa, Fla., has severed his connection with the firm of Hobbs & Knight and will open an office in Tampa as manufacturers' agent or broker, the principal line represented being road-building machinery and municipal and contractors' supplies throughout the

Plans for an electric railway from San Antonio to Austin, about 75 mi., by Mr. Tuttle and others have been considered for some time.

Tex., Waco.—St. Louis Southwestern Railway will build spur and sidetracks, altogether 5 mi., for new army camp. W. T. Eaton, Tyler, Tex., is Chief Engr.

Va., Petersburg.—Survey has been made for an extension of the Petersburg & Appomattox Electric Railway to the army camp. Richard Mann of Petersburg is Pres.

W. Va., Elmore.—On the double-tracking work of the Virginian Railway from Bud, W. Va., easterly 5 mi., for which contract was let to the Rinehart & Dennis Co. of Charlottesville, Va., as previously reported, maximum grade will be 2.07 per cent. and maximum curve 12 deg. Virginia Bridge & Iron Co., Roanoke, Va., has contract for 3 steel bridges, total length of 1125 ft. Track will be laid by the railroad company, of which H. Fernstrom, Norfolk, Va., is Chief Engr.

STREET RAILWAYS

Mo., Kansas City.—Kansas City Street Railway Co. will build tracks on Union Station Plaza with double tracked passenger shed 100 ft. long in front of the station. P. J. Kenley is Pres.

Tex., El Paso.—El Paso Electric Railway proposes to build line on Baltimore St. from Campbell St. to Madeline Park. C. W. Kellogg, Jr., is Mgr.

State of Florida. He wishes to secure representation in that territory for road rollers, graders, scrapers, plows, etc.; also street sprinklers, street sweepers and similar articles.

"Jackhammer" Wins Drilling Contest.

The Ingersoll-Rand Company, 11 Broadway, New York, has received a report saying that at a so-called Jackhammer contest on July 4 at Tonopah, Nev., in which there were 42 contestants, including representatives of a large number of manufacturers of self-rotating hand hammer drills, the Jackhammer (Type BCR-430) won first, third and fourth places. The tests were drilled in Rocklin granite, and each contestant was allowed eight minutes in which to connect his hose and drill as great a footage as possible. The winning Jackhammer put in 61 7-16 inches, and the next competitor, which took second place, put in 58 1/2 inches. Jackhammer is the name of the drill made by the Ingersoll-Rand Company, although in the contest it was improperly used to designate all classes of self-rotating drills.

Power Plant Equipment, Etc.

The Ross Power Equipment Co., 617 Merchants' Bank Bldg., Indianapolis, Ind., has recently sold to Lockwood, Green & Co. transformer equipment for the Winstonsboro Mills, Winstonsboro, N. C.; large power plant equipment to the Terre Haute Boiler Works, Terre Haute, Ind., and six large centrifugal pumps for the Fort Benjamin Harrison cantonment. The Ross Company reports very good business since its organization. O. C. Ross, its president, was formerly with the Allis-Chalmers Manufacturing Co. of Milwaukee for about 12 years as sales engineer, and also as manager of the Atlanta office. He was for the last three and a half years in charge of their Indianapolis office. While with that company he made many acquaintances in the South, traveling in Georgia and the Gulf States.

Important Engineering Contract.

The Appalachian Corporation has purchased for \$300,000 the property of the Brooklyn Cooperage Co. of New Orleans (a subsidiary of the American Sugar Refining Co.) and will convert it to cold-storage purposes at an expenditure of about \$300,000 of which about \$250,000 will be for cold-storage machinery and \$70,000 for structural alterations. The property is a three-story brick building occupying an entire block bounded by Thalia, South Peters, Erato and South Front Sts., about 308x360 feet. There is a total of approximately 5,000,000 cubic feet of space of which practically one-quarter will be devoted to cold storage. Contracts have not yet been awarded. The Tait-Nordmeyer Engineering Co. of St. Louis are engineers in charge of the entire job, and Diboll & Owen of New Orleans will have the architectural work.

(Continued on Page 85.)

Capital and Surplus
\$4,000,000



Total Resources
\$38,000,000

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Liberal Accommodations to Manufacturing Corporations

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SUMMERFIELD BALDWIN, Vice-Pres.
R. VINTON LANSDALE, Cashier.
C. G. MORGAN, Asst. Cashier.
Accounts of Mercantile Firms, Corpora-
tions, Banks, Bankers and Indi-
viduals Invited.

Maryland Trust Company BALTIMORE

Capital \$1,900,000

TRANSACTS A GENERAL TRUST AND
BANKING BUSINESS
Correspondence and interviews
Invited

**The Palmetto National Bank
OF COLUMBIA**
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FINANCIAL NEWS

The MANUFACTURERS RECORD invites infor-
mation about Southern financial matters
Items of news about new institutions, divi-
dends declared, securities to be issued, open-
ings for new banks, and general discussions
of financial subjects bearing upon Southern
matters.

FINANCIAL CORPORATIONS

Ark., Junction City.—First National Bank
of Junction City, succeeding the Union
Bank & Trust Co., is chartered; capital and
surplus \$27,500. A. B. Banks, Fordyce,
Pres.; J. A. Hearin, V.-P., and R. L.
Buffalo, Cash.

Fla., Vero.—First National Bank, capital
\$25,000, will begin business in about 60 days.
D. H. Snook of Davenport, Iowa, will be
president.

Fla., Wauchula.—Exchange Bank, capital
\$30,000, is organized with J. G. Durrance,
Pres.; W. J. Williams, V.-P., and James T.
Hancock, Cashier.

Ga., Godfrey.—Bank of Godfrey is char-
tered; capital \$25,000. Petitioners: S. H.
Bullen of Putnam County, C. E. Daniel and
W. B. Jordan of Morgan County, and others.

Ky., Louisville.—Standard Savings &

Loan Assn., capital \$15,000, is inceptd. by
John H. Frank, John H. Frank, Jr., and
E. L. Bowen.

Md., Hagerstown.—Commercial Trust Co.,
capital \$100,000, is inceptd. by Robert M.
Rupp, Harry E. Brandt, H. Lionel Mere-
dith, Dr. Samuel Wagaman, Henry Wine-
berg, W. G. Coffman and others.

N. C., Charlotte.—Charlotte Morris Plan
Co., capital \$75,000, will begin business July
25; T. M. Shelton, Pres.; D. R. Smith, 1st
V.-P.; C. A. Williams, 2d V.-P.; H. C. Sher-
rill, Secy.-Treas.

N. C., Rockwell.—Bank of Rockwell char-
tered; capital \$25,000; has begun business.
Dr. G. W. Choate, Pres.; John W. Peeler,
V.-P.; T. R. Garner, Cashier.

Okla., Miami.—A new bank, capitalized
at \$50,000, is being organized by J. T.
Whaley, Holdenville, Okla.; J. T. Gephart,
McAlester, and others of Miami. The bank
will be located in the Durant Bldg., Main
St.

Tex., Corsicana.—State National Bank is
chartered; capital \$100,000. B. B. Munsey
is Pres.; P. D. Williams and G. C. Dunn,
V.-P.s; E. L. Dupay, Cash. Business has
begun.

Tex., Ochiltree.—Farmers and Stockmen's
State Bank is chartered; capital \$25,000.
Organizers: Roy Sappington, Supply,
Okla., and Oklahoma City, and L. F. Hall,
Ochiltree. Business has begun.

Tex., San Antonio.—The South San Anto-
nio State Bank of South San Antonio is
chartered with \$25,000 capital. J. H. Bain,
Pres.; E. E. Hammond, V.-P.; J. H. Law-
rence, Cashier.

Va., Altavista.—Farmers and Merchants
Bank, capital \$50,000, will begin business
Aug. 18. C. C. Lane is Pres. and Mary
Scorey, Secy.

Va., Emporia.—Emporia State Bank is
chartered; capital \$25,000. G. M. Naff,
Pres., and R. G. Dyson, Secy.-Treas.

W. Va., Huntington.—Union Savings Bank
& Trust Co. has changed its name to the
Union Bank & Trust Co. George S. Wallace
is Pres.

NEW SECURITIES

Ala., Gadsden.—(Street).—City is offering
for sale \$16,000 of 6 per cent., 10-year \$500
denomination bonds. R. M. Wilbanks is
City Clerk.

Ala., Huntsville.—(Floating Indebtedness).
Election is to be held about the middle of
August to vote on \$30,000 of 5 per cent., 20-
year bonds to pay off floating indebtedness.
Address The Mayor.

Ala., Mobile.—(Wharf, Dock, Warehouse).—
Election is to be held August 13 to vote on
\$600,000 of 5 per cent., 30-year \$1000 denomina-
tion bonds. Harry Pillans is Mayor.

Ark., Newport.—(School).—Tuckerman and
Swift School Distrs., Jackson County, will
on July 24 sell bonds, amount in each dis-
trict to be not less than \$25,000 nor more
than \$30,000. Address School Board.

Ark., Norfolk.—(School).—Special school
district has been formed and from \$5000 to
\$10,000 of bonds are to be issued. Address
School Board.

Ark., Pine Bluff.—(School).—\$200,000 of 5
per cent., 20-year bonds Special School Dist.
of Pine Bluff have been purchased jointly
by the National Bank of Arkansas and the
Simmons National Bank, Pine Bluff.

Ark., Walnut Ridge.—(Road).—Bids will be
opened August 2 for \$35,000 of 5 or 5½ per
cent., 5-20-year bonds Road Improvement
Dist. No. 3, Lawrence County. Address
Board of Commrs. of District.

Fla., Arcadia.—(Road).—\$35,000 of 6 per
cent., 30-year \$500 denomination bonds McCall
Road Dist., De Soto County, are voted. A.
L. Durrance is Clerk.

Fla., De Land.—(School).—\$12,000 of 5 per
cent. bonds Special Tax School Dist. No. 4,
Volusia County, dated July 1, 1917, and mat-
uring 1945, are to be issued. V. W. Gould
is Chrmn. Board of Public Instruction, Volu-
sia County.

Fla., Jacksonville.—(Bridge).—\$950,000 of 5
per cent., 30-year \$1000 denomination bonds
for bridge across St. Johns River are voted.
Address Commrs. Duval County, L. L.
Meggs, Chrmn., and Frank Brown, Clerk.

Fla., Miami.—(Road, Bridge).—Election is
to be held August 11 to vote on \$140,000 of
bonds special roads and bridge districts of
Dade County. Address Board of County
Commrs., E. D. V. Burr, Chrmn.

Fla., Miami.—(Sewer, Hospital, Park, etc.).—
\$260,000 of \$1000 denomination bonds have
been disposed of as follows: E. R. Thomas,
trustee for estate of Samuel Thomas, \$100,-



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turers, shippers and banks for
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larly B/L drafts on Chicago and
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60; Fidelity Bank and Trust Co., Southern Bank & Trust Co., First National Bank of Bay Biscayne and Miami Savings Bank, jointly, \$160,000.

Fla., Miami—(School).—\$150,000 of 6 per cent. bonds Miami Special Tax School Dist. No. 2, Dade County, dated July 1, 1917, and maturing July 1, 1937, have been purchased at \$95.10 premium by Stacy & Braun, Toledo, Ohio.

Fla., Ocala—(Road, Bridge).—Election held July 17 to vote on \$75,000 of bonds; result not stated. P. H. Nugent is Clerk Board of County Commrs.

Fla., Orlando—(School).—Sub-school Dist. No. 7, Hillsborough County, has voted \$30,000 of bonds. Address School Board.

Fla., Palm Beach—(Street, Sewer, Town Hall).—Election is to be held July 31 to vote on \$50,000 of bonds. Address The Mayor.

Fla., Tampa—(Warrants).—School Board has issued \$30,000 in warrants to refund an equal amount of warrants outstanding since 1910.

Fla., Tampa—(Road).—Bids will be received until 11 A. M. Aug. 14 for \$30,000 of 5 per cent. 20-year \$1000 denomination bonds Wimauma Road and Bridge Dist., and \$100,000 Citrus Park Special Road and Bridge Dist. bonds, Hillsborough County. Jas. G. Yeats is Chrmn. and W. P. Culbreath Clerk County Commrs.

La., Crowley—(Drainage).—Election is soon to be held to vote on \$60,000 of 4th Ward, Acadia Parish, bonds. Address Police Jury.

La., Franklin—(Road).—\$80,000 of 5 per cent. bonds Road Dist. No. 2, St. Marys Parish, have been purchased at par and interest by St. Marys Bank & Trust Co., Franklin.

La., Lake Providence—(Highway).—\$100,000 of 5 per cent. \$500 denomination bonds, dated August 1, 1917, and maturing February 1, 1941, have been purchased at par by Powell, Garard & Co., New Orleans.

La., Many—(Highway).—No satisfactory bids were received July 10 for \$30,000 of 5 per cent. \$500 denomination road dist., Sabine Parish bonds. W. R. Ross is Secy. Dist. Supvrs., Pleasant Hill, La.

La., Plaquemine—(Drainage).—\$175,000 of 5 per cent. 25-year Lake Long Drainage Dist., Iberville Parish, bonds are voted. E. J. Gay is Prest. Board of Directors.

La., Springville—(School).—Bids will be received until 6 P. M. July 28 by John E. Cox, Secy. School Board, for \$3500 of 5 per cent. 17-year \$500 denomination bonds. Livingston Parish School Dist. No. 7.

La., Winnfield—(Courthouse).—Bids will be opened by the Police Jury of Winn Parish August 7 for \$75,000 of 5 per cent. 10-year bonds. Address B. W. Bailey.

Md., Rockville—(County Bonds).—Bids will be received until noon July 31 by B. E. Berry, Clerk Board Commrs. Montgomery County, for \$20,000 of 4½ or 5 per cent. 1-20-year serial bonds.

Miss., Biloxi—(School).—Bids will be opened Aug. 6 for \$22,000 of 5 per cent. 20-year \$1000 denomination bonds, dated Aug. 1, 1917. Louis Goldman is City Atty.

Miss., Cleveland—(School).—\$15,000 of 5½ per cent. bonds Skene Consolidated School Dist., Bolivar County, have been purchased at par and interest by the National City Bank of Memphis.

Miss., Greenville—(Drainage).—Bids will be received until 10 A. M. July 26 for \$700,000 of 6 per cent. \$500 denomination bonds Black Bayou Drainage Dist., Washington County, dated Sep. 1, 1917, and maturing March 1, 1923 to 1937. Address Board of Drainage Commrs., L. C. Hays, Prest.

Miss., Magnolia—(School).—Election is to be held July 28 to vote on \$5000 Leggett Consolidated School Dist., Pike County, bonds. Address School Board.

Miss., Magnolia—(School).—Notice is given that the Board of Supvrs., Pike County, will issue \$3000 of bonds Woodrow Consolidated School Dist.

Miss., Pascagoula—(School).—Bids will be opened at noon Aug. 1 for \$3840 of 6 per cent. bonds Harrison-Jackson Consolidated Line School Dist., Jackson County. W. P. Ramsay is Prest.

Mo., Caruthersville—(Levee).—\$150,000 of 5½ per cent. \$500 and \$1000 denomination serial bonds have been purchased by Kauffman-Smith-Emert Investment Co. and Wm. R. Compton Co. of St. Louis, Mo., at \$1525 premium.

Mo., Charleston—(Road).—Election is to be held July 28 to vote on \$378,000 of 5 per cent. 20-year \$1000 denomination Mississippi County bonds. Address Byron B. Guthrie.

N. C., Dunn—(Town Bonds).—Bids will be received until 9 P. M. July 30 by H. S. Parker, Town Clerk, for \$180,000 of 5½ per cent. bonds.

Mo., Fairfax—(Sewer).—\$3500 of 5 per cent. \$500 denomination bonds for walling and covering water course have been purchased at par and accrued interest by the Farmers Bank of Fairfax.

Mo., Kansas City—(Sewer, Workhouse).—\$100,000 sewer and \$50,000 workhouse 4½ per cent. 18-year average bonds have been purchased at \$151.753.50 by Merrill, Oldham & Co., Boston, Mass.

N. C., Jackson—(Road).—Bids will be received until noon July 28 by G. A. Moore, Secy. Board of Road Commrs. of Jackson Township, Northampton County, for \$12,000 of 6 per cent. 24-35-year serial road bonds.

N. C., Kenansville—(School).—\$5000 of 6 per cent. bonds Beulaville Special Tax School Dist., Duplin County, have been purchased at par by a local bank. L. Middleton is Chrmn. County Board of Education.

N. C., Lumberton—(Refunding, Water, Light).—\$51,000 of 5½ per cent. \$1000 denomination bonds maturing \$3000 annually 1927 to 1943, inclusive, have been purchased at \$255,000 premium by Harris Forbes & Co., New York.

N. C., Mocksville—(Light, Water).—Bonds for electric lights and water-works are to be issued. Address The Mayor.

N. C., Mocksville—(School).—Bids will be received until noon July 21 by J. L. Holton, County Treas., for \$3000 of 6 per cent. 20-year Davie County bonds.

N. C., Mocksville—(Street, Sidewalk).—Ordinance has been adopted providing for the issuing of \$12,000 of not exceeding 6 per cent. 20-year bonds. Z. N. Anderson & Clerk.

N. C., Mt. Airy—(School).—Election is to be held Aug. 7 to vote on \$30,000 of 5 per cent. 30-year bonds. F. M. Poore is Secy. and Treas. and E. C. Bivens, Mayor.

N. C., Oriental—(Light).—\$5000 of 20-year electric-light bonds are being offered. Address J. C. Ward, Town Clerk. Further particulars will be found in the advertising columns.

N. C., Wilmington—(Drainage).—Bids will be opened July 27 for \$20,000 of 6 per cent. bonds of New Hanover County Drainage Dist. No. 3, dated August 1, 1917; maturity \$2000 August 1, 1929, and \$2000 on August 1 of each year thereafter for 9 years. W. E. Price is Chrmn., Orton Bldg., Wilmington. Further particulars will be found in the advertising columns.

Okla., Commerce—(Sewer, Water).—\$25,000 of sewer and \$5000 of water 6 per cent. bonds have been purchased at par and \$457 premium by the Hanchett Bond Co., Chicago.

Okla., Frederick—(Sewer).—\$35,000 of 6 per cent. bonds have been purchased at 101.50 by R. J. Edwards, Oklahoma City.

Okla., Grandfield—(School).—\$25,000 of bonds defeated.

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Okla., Hobart—(Park).—\$10,000 of 6 per cent. \$1000 denomination bonds have been purchased by R. J. Edwards of Oklahoma City, Okla.

Okla., Miami—(School).—Election will be held about Sept. 1 in Picher, Cardin and Century Dist., Ottawa County, to vote on \$25,000 of bonds to establish central high school. J. A. Walker is County Clerk.

Okla., Oklahoma City—(School).—A letter to the Manufacturers Record denies report that election will be held to vote on bonds. H. M. Farcey is Secy. School Board.

Okla., Red Fork—(School, etc.).—Bonds have been voted for new school to cost about \$50,000 and other improvements are contemplated. Address The Mayor.

Okla., Red Rock—Water-works.—Bids will be received at any time for \$22,000 of 6 per cent. \$1000 denomination bonds, dated July 1, 1916, and maturing July 1, 1921, to 1941, inclusive. Clyde Cady is Town Clerk.

Okla., Ryan—(Water-works).—Election is to be held July 27 to vote on \$16,000 of bonds. Address The Mayor.

Okla., Sapulpa—(Funding).—Lieutenant-Governor M. E. Trapp, Oklahoma City, is reported to have arranged to purchase \$50,000 of 6 per cent. funding bonds. Address The Mayor.

Okla., Tulsa—(Municipal Improvements).—\$97,500 utility and \$70,000 non-utility bonds are voted. Frank Newkirk is City Auditor.

S. C., Bishopville—(School).—\$18,000 of 5½ per cent. bonds Bishopville School Dist., Lee County, have been purchased by the Carolina Bond & Mortgage Co.

S. C., Florence—(School).—\$25,000 of bonds are reported voted. Address School Board.

Tenn., Ashland City—(School).—\$10,000 Cheatham County bonds are voted. Address School Board.

Tenn., Columbia—(Street).—Ordinance has been prepared providing for the issuing of \$75,000 of 5 per cent. 10-year bonds. Address The Mayor.

Tenn., Columbia—(Indebtedness).—Resolution has been adopted authorizing the issuing of \$114,000 of 4½ per cent. 10-20-year Maury County bonds, dated Sept. 15, 1917, to take up indebtedness. Address County Clerk.

Tenn., Chattanooga—(School).—Hamilton National Bank, Chattanooga, has purchased at par \$25,000 of bonds.

Tenn., Chattanooga—(Paving).—Bids will be received until 10 A. M. July 19 for \$142,72 of 6 per cent. 1-4-year bonds. Address Jesse M. Littleton, Mayor, Municipal Bldg.

Tenn., Huntington—(Drainage).—\$125,000 of bonds Carroll County Drainage Dist. No. 1 have been purchased at 101 by James E. Caldwell & Son, Nashville.

Tenn., Maryville—(Water, Sewer).—Bonds are voted. Address The Mayor.

Tenn., Memphis—(Auditorium, Market-house).—Election is to be held July 28 to vote on \$375,000 of bonds. T. C. Ashcroft is Mayor.

Tenn., Nashville—(University, School).—New bids will be received until noon Aug. 14 for the \$1,000,000 University of Tennessee State bonds; dated July 1, 1917; maturity July 1, 1918 to 1967, inclusive; interest to be 4½ per cent. Bids at any time for \$625,000 of 4 per cent. 40-year school bonds. W. R. Marshall is Secy. State Funding Board, and Porter Dunlap, State Treas.

Tenn., Sneedville—(Road).—\$100,000 of 5 per cent. Hancock County bonds are voted and bids for same will soon be opened; denomination not less than \$1000 nor more than \$10,000; maturity, serial \$10,000 in 5 years and \$10,000 annually. H. B. Joraglin is Chrmn. Board County Commrs.

Tex., Austin.—Bonds approved by Atty.-Gen.: \$40,000 of 5 per cent. 10-40-year Plain-view street improvement; \$10,000 of 5 per cent. 10-40-year Mexia Independent School Dist.; Van Zandt County common school districts 5 per cents, as follows: No. 57, \$1000 of 20-year; No. 106, \$1000 of 10-20-year; No. 122, \$2500 of 20-year; No. 73, \$2000 of 20-year; No. 102, \$1000 of 20-year; No. 123, \$2500 of 20-year, and No. 114, \$3100 of 10-20-year; \$900 of Houston County common school dist. No. 75; \$1600 of Grayson County common school dist. No. 53; \$10,000 of May Independent school dist., Brown County; \$20,000 of 5½ per cent. 40-year dist. No. 7, and \$15,000 20-year dist. No. 12, Milam County, 5½ per cents.; \$4000 Johnson County common school dist. No. 31; \$1600 Newton County common school dist. No. 10; Shelby and Pinola County line common school dist. No. 26, \$2000; Floyd County common school dist. No. 16, \$5000; Carney Independent school dist., \$6000; Dist. No. 20, \$12,000 and Dist. No. 5, \$8000, Fannin County road improvement.

Tex., Beeville—(Water, Light).—City will issue 6 per cent. 35-year warrants to pay for municipal water and light plant. Address The Mayor.

Tex., Cleburne—(School).—The entire issue of \$250,000 of 5 per cent. 1-40-year bonds, dated March 1, 1917, were purchased by the National Bank of Cleburne, which in turn sold all or part of said issue to Mayer & Co., Cincinnati, Ohio.

Tex., Houston—(Road, Bridge).—Bids will be received until 10 A. M. July 30 for \$60,000 of the authorized issue of \$1,100,000 of 5 per cent. 10-40-year Harris County bonds. Dated July 30, 1917. H. L. Washburn is County Auditor. Further particulars will be found in the advertising columns.

Tex., Houston Heights—(Street).—The \$150,000 of serial bonds to be voted on July 28 are 5 per cents. J. B. Marion is Mayor.

Tex., Mart—(Funding).—\$14,000 of 6 per cent. warrants to fund outstanding indebtedness have been purchased by J. L. Arlitt, Austin, Tex.

Tex., Mineral Wells—(Water).—Election is to be held July 30 to vote on bonds for municipal water system. L. E. Cowling is Mayor.

Tex., San Angelo—(Hospital).—Election is to be held Aug. 21 to vote on \$50,000 of Tom Green County bonds. Address Commrs. Court.

Tex., Wichita Falls—(Road).—\$750,000 of 5 per cent. Wichita County bonds have been purchased at par and accrued interest, less attorney's fees, etc., by Kauffman-Smith-Emert Investment Co. St. Louis.

Va., Farmville—(Improvement).—No satisfactory bids were received July 11 for \$30,000 or \$50,000 of 5 per cent. 20-year bonds. H. E. Barrow is Chrmn. Finance Committee.

W. Va., Broad Oaks, P. O. Clarksburg—(Paving).—\$10,000 of 6 per cent. \$500 denomination bonds have been purchased at \$100 premium by the Clarksburg Trust Co., Clarksburg.

W. Va., Wayne—(Road).—Steps are being taken to call an election to vote on \$1,000,000 of Wayne County bonds. Address County Commrs.

FINANCIAL NOTES

The North Carolina Insurance Agents Association, which held its annual convention last week at Asheville, N. C., elected officers for the ensuing year as follows: W. E. Sharpe, Prest., Burlington; S. G. Ogden, Vice-Prest., Winston-Salem; these two being re-elections; Ray Johnson, Second Vice-Prest., also of Winston-Salem; E. E. Emerson, Secy.-Treas., Spray, N. C.

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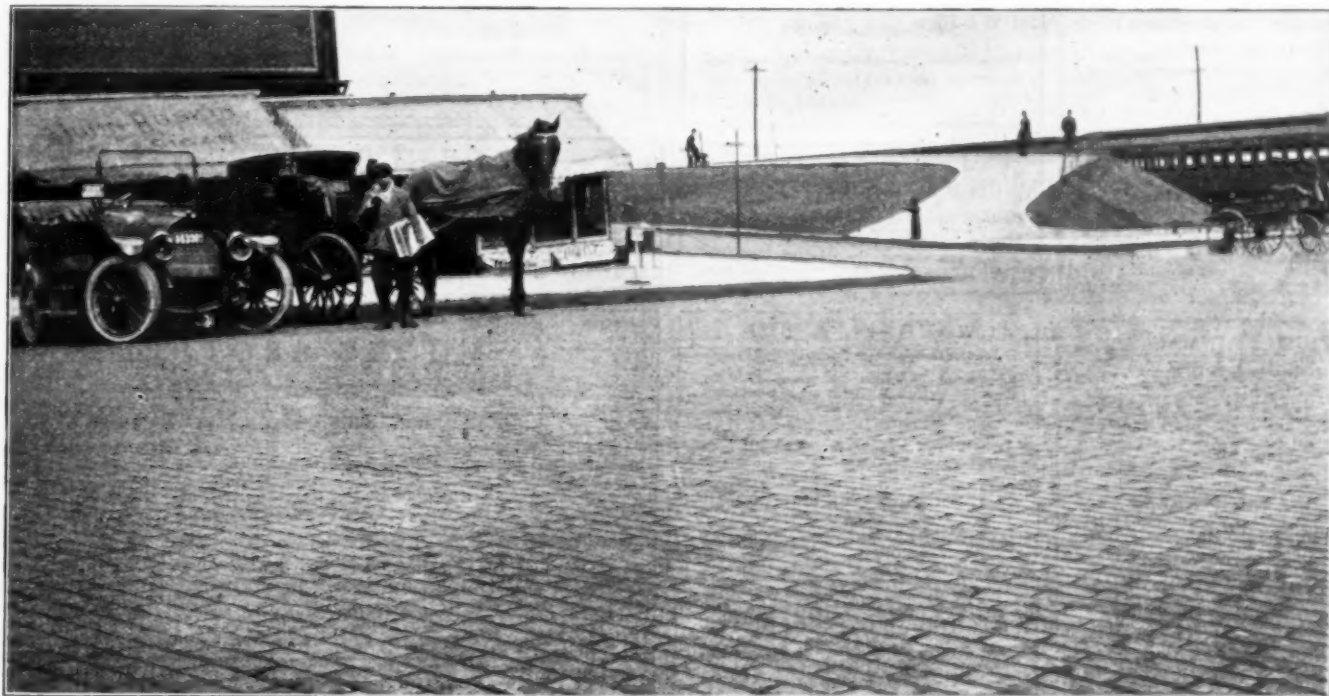
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

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INDUSTRIAL NEWS OF INTEREST

(Continued from Page 81.)

Several Trainloads of Sewer Pipe.

The Government cantonment at Louisville, Ky., has developed some nice business for the F. Bannon Pipe Co. of that city in the form of an order for sewer pipe ranging in size from 6 inches to 30 inches, which will make an aggregate shipment of 175 cars.

A New Variable Speed Friction Drive.

A variable speed friction drive, invented by J. W. Murry, 303 Morton Ave., Mounts-ville, W. Va., and which is described as being adaptable to automobiles and also to machine tools requiring a frequent change of speed, consists primarily of four disks in contact with three friction wheels. These are so arranged as to make twelve points of contact and the friction wheels are interlocked to form a differential gear. The force necessary for friction is produced by means of electro magnets, which have pole pieces composed of a soft tube filled with iron filings. Thus, as the friction surface wears, the pole piece also wears, relieving the pressure between the magnet and the disks, and applying it between the friction and the disk, at the same time maintaining an air gap between the magnet and the disk, which is practically zero in length. The mechanical advantage claimed is that pressure is at the frictional contacts and not on shaft or bearings, which eliminates springs and eccentric bushings. The idea is to obtain a friction drive of large power rating, but reasonable in size. Using twelve points of contact and three frictions the capacity is twelve times as great as one point of contact.

TRADE-LITERATURE

Multi-Stage Centrifugal Pumps.

Bulletin 7251, June, 1917, of the A. S. Cameron Steam Pump Works, 11 Broadway, New York, relates to the Cameron multi-stage centrifugal pumps, one of which, the three-stage pump, turbine driven, was exhibited at the N. A. S. E. Rock Island Convention where H. S. Budd of the company's Chicago office, read an interesting paper on the history, development and application

of centrifugal pumps. This contribution to the work of the convention was very favorably commented upon by the engineers present, for it considered the subject from the year 1851, when the first pump of this kind to attract notice was exhibited by J. P. Appold. The special features of the Appold pump, it is stated, have been retained in the best pumps constructed since that day. Mr. Budd's paper is an exhaustive treatise and should be read by all who are interested in hydraulic engineering.

School Buildings of Southern Pine.

School architecture which embodies beauty, economy, convenience and safety is considered in a handsome booklet issued by the Southern Pine Association, New Orleans, which presents a series of ten plans, expressing the ideas of as many architects, concerning the modern pavilion type of school building. They were chosen as the best of 43 entries in a prize contest conducted by the Association and in which designs were submitted from all sections of the United States. Cash prizes aggregating \$500 were offered for the best plans of the pavilion type of school building to be erected of Southern pine. The pavilion type is a one-story structure designed to be built in units around an open court, these several units to be connected by covered cloisters. It is claimed that this type is safer in case of fire and also it is more healthful than the familiar type of school edifice. The Association has also issued an interesting bulletin on the use of Southern pine edge grain flooring. It contains many pictures.

Facts About Boiler Setting.

"One of the most persistent enemies of proper combustion is the ordinary type of boiler setting. Built of brick, sometimes even of steel, air, through leaky joints improperly built or designed, creeps into the fire zone chilling it so that efficiency goes up the stack in a cloud of smoke. In designing several types of steel encased settings the Henry Vogt Machine Co. has borne in mind not only the most obvious details for economy but a great many other points that materially increase efficient combustion at the same time largely increasing the ease and economy of maintenance." These and many other important facts are stated in Bulletin S-C-3, devoted to Sectional Steel Casings, and issued by this company, whose works are at Louisville, Ky.

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